THERA TRAINER

THERA-TRAINER TIGO (≙ THERA-VITAL / THERA-LIVE)

USER MANUAL

EN English translation of original user manual

CE 0297

MADE IN GERMANY

Congratulations!

Opting for a THERA-Trainer was a great choice. This innovative movement exerciser offers top performance „Made in Germany“.

This user manual will help you get to know your THERA-Trainer better. It will safely guide you through all functions and control options and provide you with tips and information on how to use your new exerciser best.

Before starting the unit for the first time, please read and observe chapter 2 “Safety and dangers”.

Should you have any questions or suggestions, your local specialist dealer will be happy to help.

Have fun and get moving with your THERA-Trainer.

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1 USER GUIDE

User manual and product are labelled with symbols. The symbols and their functions make it easier to use the product safely and efficiently.

1.1 Warning notices

Classification of warning notices

There are different types of warning notices indicated by the following signal words depending on the type of danger:

- ❑ **Caution** warns about the risk of material damage.
- ❑ **Warning** warns about the risk of physical injury.
- ❑ **Danger** warns about the risk of fatal injury.

Structure of warning notices

Signal words

Type and source of danger!

▶ Action to avoid the danger.

1.2 Notes

Information on the efficient use of the product. **Note**

1.3 Symbols in the user manual

Instructions

Structure of instructions:

▶ Instruction to do something.

Result of the action, if necessary.

Lists

Structure of bulleted lists:

- ❑ List level 1
  - – List level 2

Structure of numbered lists:

1. List level 1
2. List level 1
   - 2.1 List level 2
   - 2.2 List level 2

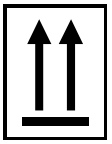
USER SECTION

- ❑ Instructions for users.

EXPERT SECTION

- ❑ Instructions for trained dealers, doctors and therapists.

1.4 Symbols on the product

	User manual		Danger due to movable parts
	Observe the user manual!		AC: The THERA-Trainer tigo uses alternating current
	Manufacturer		Protection class II device
	Date of manufacture		Note on damage due to static charging
CE 0297	Market launch according to directive 93/42 EEC for medical devices		Danger due to THERA-Trainer tigo slipping. Do not lean on safety handle/upper body exerciser.
SN	Serial number		Do not step on covers or foot rests.
	Type BF medical devices		Do not sit on safety handle/upper body exerciser.
	Disposal Do not dispose of product with the regular household waste. Dispose of product in accordance with local regulations.		This side up
	Protect product from humidity.		Caution fragile
	Maximum body weight		Temperature limit: between -25 °C (-13 °F) and +75 °C (+165 °F)
	Maximum extension of device base or supporting arm of upper body exerciser/safety handle.		Do not stack
IP21	Protected against stable foreign objects with a diameter from 12.5 mm. Protection against dripping-water that falls vertically.		

2 SAFETY AND DANGERS

- Observe the user manual.
- Use THERA-Trainer tigo exclusively in good and functional condition.
- Regularly check tightness of screws.
- Prior to the initial start-up, have your trained dealer, doctor or therapist show you how to use the product.
- Before starting the training, consult a doctor or therapist and clarify whether THERA-Trainer tigo can be used without assistance.
- Prior to the initial start-up, have your trained dealer, doctor or therapist instruct the assistant.
- Put THERA-Trainer tigo and chair/wheelchair on even and slip-proof floor.
- Make sure that adjustable device base is locked.
- Use THERA-Trainer tigo exclusively when sitting.
- Always wear closed shoes without laces when training.
- Always wear close-fitting clothes when training.
- Remove any jewellery and accessories before starting the training session.
- Make sure that the self-operated tip-up protection is safely fastened to the wheelchair.
- Do not use safety handle or upper body exerciser as standing aid.
- Do not use THERA-Trainer tigo in wet, humid or hot environment.
- Have exclusively trained dealers do any repair work.
- In case of damage, malfunctions, etc. of the THERA-Trainer tigo, contact a trained dealer immediately.
- Consult the manufacturer before any modification and modify THERA-Trainer tigo exclusively with the manufacturer's approval.
- Do not smoke while exercising.
- Make sure that THERA-Trainer tigo does not get wet.
- If any symptoms of illness occur during or after training, seek medical advice immediately.
- Always supervise children during training.
- When laying cables, make sure that
  - the user's movements are not limited.
  - the movements of the THERA-Trainer tigo are not limited.
  - there is no risk of persons falling over or being limited by cables.
- Position THERA-Trainer tigo so that power plug is easily accessible and can be pulled out of socket outlet quickly in case of emergency.
- Use the manufacturer's original parts exclusively.
- Use THERA-Trainer tigo exclusively with undamaged and functional cables.
- Make sure to run power supply cable in such a way that there is no risk of strangulation.
- Take care not to pinch any fingers when adjusting settings on THERA-Trainer tigo.
- Use THERA-Trainer tigo exclusively with correctly set supply voltage.
- Before opening the housing, make sure that power plug is unplugged.
- If the user has a cardiac pacemaker, consult a doctor before the first training session.
- Make sure that cardiac pacemaker is working reliably when using the cardio-pulse-set.
- Exercise exclusively if THERA-Trainer tigo is switched on.
- Pull power plug after every training session.
- Before every training, make sure that safety equipment is working correctly.
- Keep animals and playing children away from THERA-Trainer tigo.

- Leave THERA-Trainer tigo at room temperature for 1 hour before using it for the first time.
- Transport THERA-Trainer tigo exclusively with transport castors on even and stable floors.
- For safe use of the THERA-Trainer tigo, use self-operated tip-up protection.
- In the case of paralysis, spasms or weak legs, use THERA-Trainer tigo exclusively with the leg support option.
- Do not touch moving parts (e.g. crank, radius adjustment, foot rests, etc.).
- Make sure that power plug is disconnected before adjusting any settings on movable parts.
- In the case of contractures or limited joint mobility, use foot rests with stepless radius adjustment.
- Make sure that power plug is disconnected before adjusting any settings on foot rests with stepless radius adjustment.
- Make sure that arm rests are safely attached to therapy grips or cranks when exercising the upper body.
- Exercise exclusively with two therapy grips or two arm rests.
- Exercise exclusively with both feet correctly positioned in the foot rests.
- When training in an electric wheelchair, switch off electronic control/driving function.
- Limit motor power as required for the user and his training state.
- Set sensitivity of spasm detection to fit the user's needs.
- Make sure that the user exercises with a stable chair that will not wobble or tip over.
- Before every training session using a chair with castors, make sure that
  – it is possible to lock the castors.
  – inadvertent unlocking of the castors while exercising is not possible.
- Make sure that it is not possible for the chair/wheelchair to tip over.
- Make sure that helix cable of control and display unit with 2.7" colour screen does not get tangled in the cranks.
- Before starting the upper body training, pull out device base at least 10 cm.
- Use USB-interface exclusively with options (USB stick, printer) approved by the manufacturer. End training session before connecting.
- For ports with symbol: Damage due to static charging:
  – Do not touch with hands or tools.
  – Discharge potential static electricity, e.g. touch device frame with metal part.
- Use exclusively power plug supplied by the manufacturer.
- Make sure that children do not swallow or inhale any small parts (e.g. covers of USB-interfaces, Bluetooth sticks, retaining screws).

3 INTENDED USE

The THERA-Trainer tigo is a therapy device for improving the mobility of persons whose mobility is limited.

The THERA-Trainer tigo is suitable:

- ❑ as an exerciser for the legs or the upper body.
- ❑ for passive (motor-supported) and active (with muscle power) movement training, and for active and passive muscle training in combination.
- ❑ for the use at home, in hospitals, nursing homes and therapy facilities.
- ❑ for users whose height is between 120 and 200 cm (depending on clinical picture, type of handicap, and the type of wheelchair or chair used for the training).
- ❑ for users whose body weight is less than 120 kg.

Note

The THERA-Trainer tigo is a medical device according to the medical devices directive. The intended use includes the treatment of the device as a medical device.

3.1 Indications

Use THERA-Trainer tigo exclusively:

- ❑ for users with limited arm or leg mobility
- ❑ for users who are able to sit upright

For training without therapeutic assistance, use THERA-Trainer tigo exclusively:

- ❑ for users who are able to operate the THERA-Trainer tigo without assistance.

User

- ❑ Persons who have been instructed by expert staff on how to use the THERA-Trainer tigo and are thus authorised to operate and exercise with the THERA-Trainer tigo.
- ❑ The user is entirely responsible for the safe and correct use of the THERA-Trainer tigo.

Expert staff

- ❑ Persons who gained their skills and expertise by means of professional training in the medical or medical-technical sector (e.g. doctors, therapists, specialist dealers).
- ❑ Persons who due to their professional experience and by means of instruction/training by the manufacturer are able to assess safety-relevant regulations and recognise potential risks in their field of work (e.g. assistants).

▶ To guarantee safe use of the THERA-Trainer tigo, train expert staff regularly.

3.2 Instruction

Before the first start-up:

- ▶ Have an instruction course conducted
  - – by a specialist dealer, doctor or therapist trained by the manufacturer.
  - – using this user manual.
- ▶ Consult a doctor or therapist to determine whether training with the THERA-Trainer tigo is possible without supervision.
- ▶ Have a dealer, doctor or therapist trained by the manufacturer instruct the assistant.

3.3 Biocompatibility

All components and options of the THERA-Trainer tigo the user will touch when using the unit as intended are designed to meet the biocompatibility requirements of the applicable standards.

- ▶ For any questions, contact a trained dealer.

4 FORESEEABLE MISUSE

The THERA-Trainer tigo is not suitable for:

- ❑ Diagnosis
- ❑ Monitoring
- ❑ Measuring

4.1 Contraindications

Do not use THERA-Trainer tigo for:

- ❑ users weighing more than 120 kg.
- ❑ users shorter than 120 cm or taller than 200 cm.
- ❑ users with serious contractures.
- ❑ users with ulcers or raw skin that would touch the unit (if in doubt, seek medical advice).
- ❑ users with extreme osteoporosis.
- ❑ users with imperfect osteogenesis (Osteogenesis imperfecta).
- ❑ users with unstable circulation,
  - e. g. due to being bedridden.
- ❑ users whose range of movement is extremely limited and for whom even very light passive movement training poses a risk of injury.
- ❑ unsupervised self-training, if the user cannot operate the THERA-Trainer tigo without assistance.
- ❑ users with cardiovascular problems.
  - consult a doctor
  - exercise under supervision

Note

For users with a short upper body or a low seated height, it might be necessary to use an appropriate configuration of the THERA-Trainer tigo. Before starting the training, consult a doctor, therapist or trained dealer.

For users with a body weight of more than 120 kg it is necessary to use special accessories for the THERA-Trainer tigo after consultation with the manufacturer or the trained dealer.

4.2 Misuse

Do not use THERA-Trainer tigo in:

- ❑ combination with other products emitting ionising radiation (e. g. radiation therapy, nuclear medicine, etc.)
- ❑ rooms containing
  - explosive substances
  - oxygenated air
- ❑ the presence of
  - flammable anaesthetics
  - volatile solvents
- ❑ outdoor exercise.

5 SIDE EFFECTS

In rare cases:

- ❑ partially increased pain
- ❑ partially too strong muscle tone reduction
- ❑ injuries of the skin (e.g. decubitus)

Note

No other side effects are known.

6 SCOPE OF DELIVERY AND DESCRIPTION OF DELIVERED EQUIPMENT

The THERA-Trainer tigo comes with individual options. This user manual describes all options available for the THERA-Trainer tigo. Depending on the model, the user manual may include options not featured by the THERA-Trainer tigo.
If the THERA-Trainer tigo features options not described in the user manual, an appendix will be included.

6.1 Contents of delivery

The delivery note contains all necessary information on the scope of delivery.

6.2 Basic equipment

Basic equipment of the THERA-Trainer tigo:

- ❑ Base unit
  - – powder coated metal frame
  - – 240 watt electric motor for leg exercise
- ❑ Device base unit depending on equipment, device base
  - – with transport castors
  - – flat
  - – flat, incl. wheel set
  - – height-adjustable, incl. wheel set
- ❑ Foot fixing/leg support depending on equipment, foot rest
  - – with crank
  - – with 2-stepped radius adjustment
  - – with stepless radius adjustment
- ❑ Safety handle/upper body exerciser, depending on equipment
  - – as upper body exerciser
    with long crank (110 mm)
    with short crank (75 mm)
  - – as upper body exerciser short
    with long crank (110 mm)
    with short crank (75 mm)
- ❑ Control and display units/software, depending on equipment
  - – with control and display unit
  - – with software package
- ❑ User manual THERA-Trainer tigo
- ❑ Main cable

6.3 Options

Available options:

- ❑ Self-operable tip-up protection
- ❑ Leg support
- ❑ Foot fixing
- ❑ Grip adapter
- ❑ Therapy grips
- ❑ Arm rests with bar-shaped grips
- ❑ Wristbands for arm rests with bar-shaped grips
- ❑ Arm rests for therapy grips
- ❑ Wristbands for therapy grips/safety handle
- ❑ Mini-PC for software package Cycling group therapy
- ❑ Software package Cycling group therapy
- ❑ Printer for training documentation
- ❑ Software package Cycling documentation and report

6.4 Removable parts

Removable parts of the THERA-Trainer tigo:

	Name	Article no.
	Leg support	A001-428
	Cushion of leg support	A001-074
	Velcro for leg support	40000553-000
	Velcro for foot rest	40000552-000 40000555-000
	Cushion of foot fixing	A001-073
	Grip adapter	A001-419
	Therapy grips	A001-420
	Arm rests with bar-shaped grips	A002-757

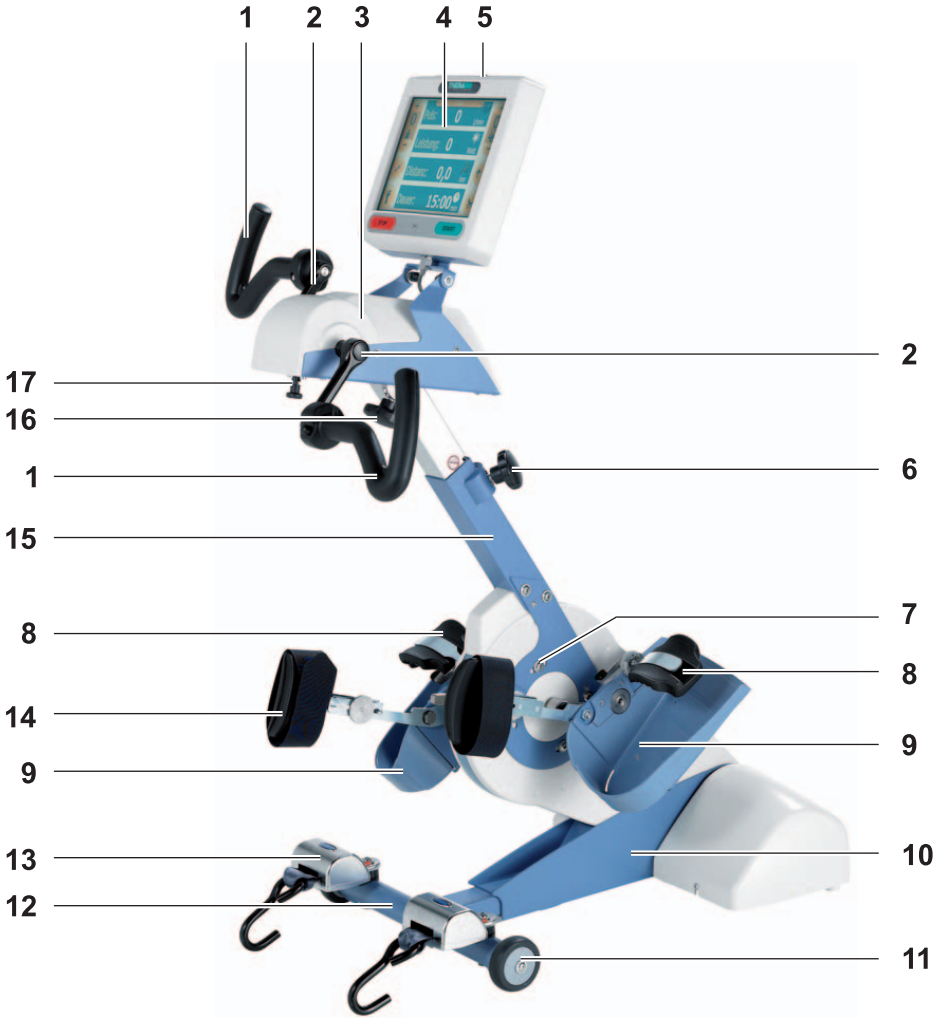
	Name	Article no.
	Wristbands for arm rests with bar-shaped grips	A001-427
	Arm rests for therapy grips	A003-724
	Wristbands for therapy grips/ safety handle	A002-440
	Control and display unit with 10.4" colour screen incl. touch function	A001-423
	Control and display unit with 5.7" colour screen	A001-422
	Control and display unit with 2.7" colour screen	A001-727
	Mini-PC for software package Cycling group therapy	A002-425

	Name	Article no.
	Printer for training documentation	A000-105
	Chest belt of cardio-pulse-set	A000-559
	Main cable: EU H05VV-F 3x0.75mm² length=2m Australia H05VV-F 3x0.75mm² length=2m USA Hospital Grade SJT 3xAWG 18, length=3m CH H05VV-F 3x0.75mm² length=2m England H05VV-F 3x0.75mm² length=2m	 55000024-001 A000-956 55000281-001 55000289-001 55000291-001

6.5 Model overview

Basic functionality	Type overview, name on type plate	Serial number range 230 V	Serial number range 115 V	Serial number range 100 V	Available control and display unit	Available upper body exercise modules
Leg exerciser, can be combined with upper body exerciser module	THERA-Trainer tigo	A000-525-…	A002-461-…	A002-465-…	2.7" colour screen	Upper body exerciser A001-416 Upper body exerciser short A002-051
					5.7" colour screen	
					10.4" colour screen	
	THERA-vital	A003-205-…	A003-204-…	A003-203-…	5.7" colour screen	
					10.4" colour screen	
	THERA-live	A003-208-…	A003-207-…	A003-206-…	2.7" colour screen	

7 OVERVIEW



(1) Therapy grips
(2) Crank (application part Type BF)
(3) Upper body exerciser
(4) Control and display unit with 10.4" colour screen incl. touch function
(5) USB-interface
(6) Locking-pin for height adjustment of safety handle/upper body exerciser
(7) Adjustment of inclination for safety handle/upper body exerciser
(8) Foot fixing
(9) Foot rest (application part Type BF)
(10) Base unit
(11) Transport castor
(12) Device base with transport castors
(13) Self-operable tip-up protection
(14) Leg support
(15) Supporting arm pipe for safety handle/upper body exerciser
(16) Star-shaped handle for horizontal adjustment of upper body exerciser
(17) Lock button for upper body exerciser

USER SECTION

Note *The user section addresses the user and describes how to use the THERA-Trainer tigo.*

8 TRAINING REQUIREMENTS

Danger

Danger to life due to cardiac pacemaker!
Before the first training session
- ▶ Consult the manufacturer of the pacemaker about potential complications.
- ▶ Consult a doctor.
- ▶ Observe emissions, contact trained dealer (see Electromagnetic emission).

Warning

Risk of injury due to insufficient preparation!
- ▶ Disinfect THERA-Trainer tigo before every training (see Cleaning and disinfection).
- ▶ Make sure that cranks are turning freely.

Before starting the training:

- ▶ Consult trained dealer/doctor whether safe training without an assistant is possible or whether an assistant is required.
- ▶ Undergo instruction from trained dealer.
- ▶ Read the user manual.
- ▶ Position THERA-Trainer tigo so that power plug is easily accessible and can be pulled out of socket outlet quickly in case of emergency.
- ▶ Have a doctor or therapist compile a training schedule.
- ▶ Make sure that chair/wheelchair does not tip over.
- ▶ Make sure that the parameters fit the user's individual needs (motor power, spasm detection, training time, exercising resistance, etc.).
- ▶ Make sure that foot rests/arm rests move freely.
- ▶ Make sure that the range of movement is adapted to fit the user's individual needs.
- ▶ Make sure that foot rests/arm rests feature sufficient safety equipment.
- ▶ Before starting the leg exercise, make sure that crank moves freely. Turn crank with secured legs manually (with muscle power).
- ▶ Before starting the arm exercise, make sure that crank moves freely. Turn crank with secured arms manually (with muscle power).
- ▶ Contact your doctor, therapist or trained dealer if you have any questions, problems, or if error messages are displayed.
- ▶ If you have problems with the recommended configuration, contact your trained dealer.
- ▶ Press START button to start training session.

During training:

- ▶ Start training slowly.
- ▶ Increase training to 70% of individual performance limit.
- ▶ Avoid overstraining.
- ▶ Secure legs or arms sufficiently with arm or foot rests.

8.1 Fields of use

Use THERA-Trainer tigo as:

- ❑ leg exerciser
- ❑ upper body exerciser

THERA-Trainer tigo is especially recommended for:

- ❑ multiple sclerosis (MS)
- ❑ stroke, hemiplegia, apoplexy
- ❑ paraplegia, tetraplegia, bifid spine
- ❑ Parkinson's disease
- ❑ cerebrocranial trauma
- ❑ muscular diseases such as muscular dystrophy
- ❑ cerebral palsy
- ❑ cardiovascular diseases
- ❑ rheumatic diseases
- ❑ arthrosis, arthritis
- ❑ walking problems and movement restrictions
- ❑ general hypokinesia

8.2 Correct posture

- ▶ Exercise in an upright posture.
- ▶ Begin the training with a small distance between chair/wheelchair and THERA-Trainer tigo.
- ▶ Increase the distance as the training progresses in order to increase the stretching effect of knee and hip joints or arm and shoulder joints.
- ▶ Avoid overstretching the joints in order to prevent injuries of muscles, tendons and ligaments.
- ▶ Set height of THERA-Trainer tigo individually.
- ▶ Assume physiologically correct training position.
  - – Consult doctor or therapist.

8.3 Training schedule

To improve mobility, strength and endurance:

- ▶ Exercise regularly.
- ▶ Exercise in short units to avoid overstrain.
- ▶ Begin with training sessions of max. 15 minutes.
- ▶ Start with slow passive exercise to warm up and then switch to light active exercise with little training resistance.
- ▶ Increase training time and speed in small steps and do more active muscular exercise with higher exercising resistance.
- ▶ Several training sessions per day are possible, provided that there are no negative side effects and the user's individual capacity is not exceeded.

8.4 Active and passive training

Active training

- ❑ The user uses his own muscle power to work against the set training resistance

Setting options for active muscular exercise for control and display unit with 5.7"/ 10.4" colour screen:

- ❑ Specified resistance:
  - The user works against the set training resistance.
- ❑ Specified performance:
  - The user exercises at a constant power level (Watt). For this purpose, the exercising resistance is adjusted depending on the number of revolutions.
- ❑ Heart rate limit:
  - The user works up to a set pulse limit. The exercising resistance will reduce automatically when the user's pulse exceeds this limit. This requires using a control and display unit incl. cardio-pulse-set.
- ❑ Speed demand:
  - A certain number of revolutions is set which the THERA-Trainer tigo will keep constant during the entire training session. The user effects a performance by active pedalling. Coordinating the speed of the foot rests is not necessary.

Passive training

- ❑ THERA-Trainer tigo moves the user.
  - The user does not use his own muscle power.
- ❑ THERA-Trainer tigo provides the required energy.
- ❑ When switched on, the THERA-Trainer tigo will always start with passive exercise at the set number of revolutions.
- ❑ By actively moving the user in the same direction, the THERA-Trainer tigo will automatically switch to active exercise.

8.5 Increased muscle tone/spasms

Muscle tone reduction

- ❑ slow and smooth rotations
- ❑ small distance between THERA-Trainer tigo and chair/wheelchair
- ❑ upright sitting position
- ❑ small crank radius

It is possible for the tone reduction to last for several hours.

▶ Adapt the training program with the help of a doctor or therapist.

If a spasm occurs during the training session:

- ❑ The electronic system of THERA-Trainer tigo will recognise the spasm.
- ❑ If the anti-spasm-control is activated (factory setting), the motor will stop immediately.
- ❑ THERA-Trainer tigo will continue in forward direction after a short delay (factory setting).
- ❑ The forward movement will stretch the muscles and thus relax the spasm.

Note

Depending on individual requirements, it is possible to reverse the direction of rotation after a spasm was recognised.

9 STARTING UP THE THERA-TRAINER TIGO

9.1 Connecting the main cable

Caution

Material damage due to incorrect installation!

- ▶ Make sure that plug is plugged in correctly when connecting cables.
- ▶ Observe position of plug.

- ▶ Plug power plug into socket outlet.
- ▶ Use exclusively power plug supplied by the manufacturer.

THERA-Trainer tigo performs a self-test.

THERA-Trainer tigo is ready for use.

9.2 Switching on or off

Switching on

To switch on the THERA-Trainer tigo:

- ▶ Plug power plug into socket outlet.
- ▶ Use exclusively power plug supplied by the manufacturer.

After the self-test, THERA-Trainer tigo is ready for use.

Control and display unit with 2.7" colour screen will switch to stand-by mode when switched on.

- ▶ Press **START button** on control and display unit with 2.7" colour screen.

Stand-by mode

THERA-Trainer tigo will switch to stand-by mode when

- ❑ no button is pressed for a certain period of time (not during training).
- ❑ the STOP button is pressed for a certain period of time.

The screen light switches off.

To activate the THERA-Trainer tigo:

- ▶ Press any button.

After the self-test, THERA-Trainer tigo is ready for use.

Switching off

To switch off the THERA-Trainer tigo:

- ▶ Pull power plug from socket outlet.

9.3 Self-operated tip-up protection

To prevent the chair/wheelchair from tipping over during the training session, attach the tip-up protection as follows:

- ▶ Move chair/wheelchair in training position in front of THERA-Trainer tigo.
- ▶ Push down red lever **4** on tip-up protection **3**.
- ▶ Pull out belt **2** by hook **1**.
- ▶ Attach hook to a stable part of the chair/wheelchair frame at an angle of approx. 30°.
- ▶ Make sure that hook is safely attached.

The belt will tighten automatically.

Release tip-up protection as follows:

- ▶ Push down red lever **4** on tip-up protection **3**.
- ▶ Pull up the hook and unhook it from chair/wheelchair frame.
- ▶ Let belt retract completely.

9.4 Securing feet and legs

Foot rests

Secure feet in foot rests as follows:

- ▶ Make sure that THERA-Trainer tigo is not in training mode. If necessary, press STOP button of control and display unit twice.
- ▶ Secure feet exclusively when seated.
- ▶ Make sure that feet are correctly positioned in foot rests **2**.
- ▶ Wrap velcros **1** tightly around back of foot.
- ▶ Fasten velcros on outside of foot rests.

Foot fixing

Note

For unassisted, quick and simple securing of feet in foot rests (e.g. in case of paralysis, spasticity, etc.).

Secure feet in foot rests as follows:

- ▶ Make sure that THERA-Trainer tigo is not in training mode.
  If necessary, press STOP button of control and display unit twice.
- ▶ Press release lever **3** on foot fixing **2**.

Retaining bracket **1** opens.

- ▶ Put feet into foot rests.
- ▶ Make sure that feet are correctly positioned in foot rests.
- ▶ Press down foot fixing and secure feet.

Release foot fixing as follows:

- ▶ Press retaining bracket **1** slightly down and activate release lever **3** at the same time.

Retaining bracket opens.

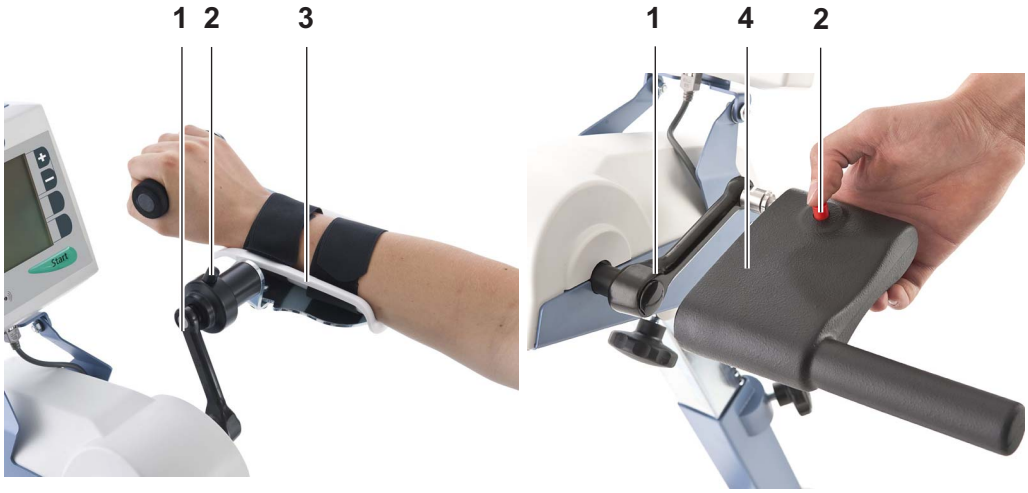
Leg support

The leg support is mandatory for users with paralysis, spasticity or weak legs. **Note**

Apply leg support as follows:

- ▶ Make sure that THERA-Trainer tigo is not in training mode. If necessary, press STOP button of control and display unit twice.
- ▶ Put feet into foot rests.
- ▶ Make sure that feet are correctly positioned in foot rests.
- ▶ Use velcro **1** to secure calves on leg support **2**.
- ▶ Make sure that the user is able to remove the velcro without assistance if necessary, or that an assistant is available.

9.5 Installing grips and arm rests



- ▶ Press locking bolt **2**.
- ▶ Slide therapy grips/arm rest **3** or grip adapter **4** onto crank **1** up to the stop.
- ▶ Release locking bolt.
- ▶ Make sure that locking bolts audibly click into place.
- ▶ When installing the grip adapter, make sure that crank locks audibly.

Note *The grip adapter makes the upper body exerciser a top part with safety handle function.*

9.6 Locking/unlocking the crank

Note

*The cranks are locked when using the THERA-Trainer tigo as a leg exerciser to serve as a safety handle for the user. For this purpose, install grip adapter **3**.*

When using the THERA-Trainer tigo as an upper body exerciser, the respective therapy grips or arm rests must be installed and the crank unlocked.

To lock cranks:

- ▶ Pull out lock button **1** on lower side of upper body exerciser **2**.
- ▶ Turn lock button by 90° and let go.
- ▶ Turn crank so that it is in horizontal position.
- ▶ Make sure that lock button audibly clicks into place.
- ▶ Make sure that crank locks audibly and does not move any more.

Crank is locked.

To unlock crank:

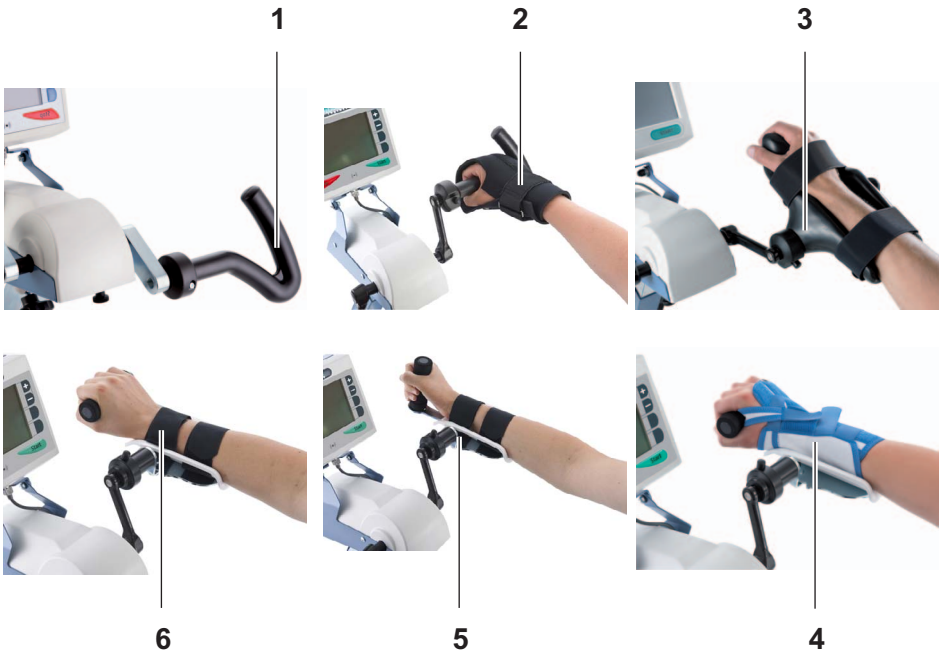
- ▶ Pull out lock button on lower side of upper body exerciser.
- ▶ Turn lock button by 90° and let go.

Crank is unlocked.

9.7 Securing the arm

Warning

Risk of injury due to inadequate distance!
To protect thumb against injuries:
▶ When using a THERA-Trainer tigo with control and display unit with 10.4" colour screen, secure thumb in arm rest with velcro.



Variants:

- ❑ Therapy grips **1**
- ❑ Wristbands for therapy grips/safety handle **2**
- ❑ Arm rests for therapy grips **3**
- ❑ Wristbands for arm rests with bar-shaped grips **4**
- ❑ Arm rests with bar-shaped grips vertical **5**
- ❑ Arm rests with bar-shaped grips horizontal **6**

Note

Choose therapy grips according to the user's needs.

If the user is not able to hold therapy grips:

▶ Use therapy grips with wristbands.

Secure arms as follows:

▶ Make sure that THERA-Trainer tigo is not in training mode. If necessary, press STOP button of control and display unit twice.
▶ Put arm into plugged-in arm rest of upper body exerciser.
▶ Secure with velcros.

-OR-

▶ Put arm rest on a table or the user's thigh.
▶ Secure arm in arm rest with velcros.
▶ Plug arm rest onto crank of upper body exerciser.

10 TRAINING WITH THERA-TRAINER TIGO

Warning

Risk of injury due to lack of independence!
If the user cannot operate the THERA-Trainer tigo without assistance:
- ▶ Make sure that the user exercises exclusively with a trained assistant.

Warning

Risk of injury by trapped shoelaces!
- ▶ Wear exclusively closed shoes when training.
- ▶ Wear exclusively shoes without laces when training.

To start the training session:

- ▶ Position a stable chair or wheelchair/electric wheelchair with a back of sufficient height in front of THERA-Trainer tigo.
  When using a wheelchair/electric wheelchair, put on the brakes.
- ▶ Before every training session using a chair with castors, make sure that
  – it is possible to lock the castors.
  – inadvertent unlocking of the castors while exercising is not possible.
- ▶ Secure chair/wheelchair with self-operated tip-up protection.
- ▶ Use exclusively arm or leg exerciser.
- ▶ Before starting the leg exercise, make sure that crank moves freely. Turn crank with secured legs manually (with muscle power).
- ▶ Before starting the arm exercise, make sure that crank moves freely. Turn crank with secured arms manually (with muscle power).
- ▶ Depending on the type of training,
  – place and secure legs in foot rests.
  – place arms in arm rests or secure arms.
  – hold therapy grips.
- ▶ Select THERA-Trainer tigo training program on control and display unit.
- ▶ Press START button on control and display unit.

10.1 Leg exercise

- ▶ THERA-Trainer tigo permits active or passive leg exercise.
- ▶ Lock cranks of upper body exerciser in horizontal position.
- ▶ Do not use safety handle as standing aid.
- ▶ Exercise exclusively with two foot rests.

10.2 Arm exercise

Warning

Risk of injury!

- ▶ Do not put feet into foot rests during upper body training.
- ▶ Unlock cranks before every training session with the upper body exerciser.

Warning

Risk of injury through unprotected metal parts!

- ▶ Do not remove foot rests for arm exercise.

- ▶ THERA-Trainer tigo permits active or passive arm exercise.
- ▶ Make sure that arm rests are safely attached to the crank when exercising the upper body.
- ▶ Make sure it is not possible for arms to inadvertently loosen out of arm rests/ therapy grips.
- ▶ Before starting the arm exercise, unlock lock button of upper body exerciser.
- ▶ Exercise exclusively with two therapy grips or two arm rests.

10.3 Training programs

Note *Before starting the training, have a doctor, therapist or trained dealer adapt the training program to fit the user's individual needs and brief the user.*

To start training program:

- ▶ Press START button.

To stop training program:

- ▶ Press STOP button.

Note *Using the following training programs is exclusively possible with the control and display unit with 5.7" or 10.4" colour screen.*

Training program:

- ❑ Neuro
- ❑ Ortho
- ❑ Cardio
- ❑ Isokinetic

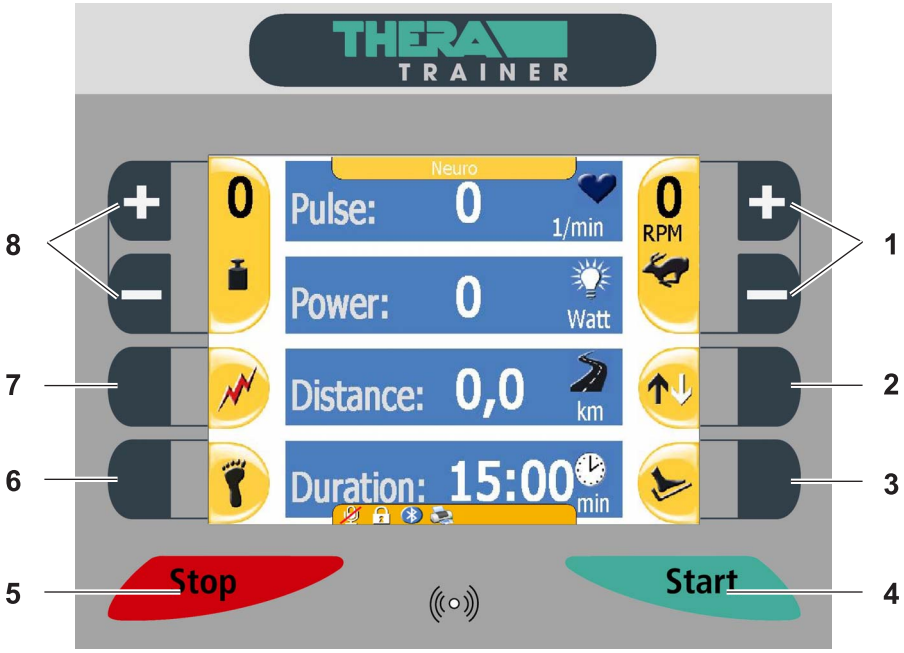
Note *The following additional training programs are available with the control and display unit with 5.7" or 10.4" colour screen.*

Training program:

- ❑ Keeper
- ❑ Hedgehog
- ❑ Car
- ❑ Planet
- ❑ Group therapy

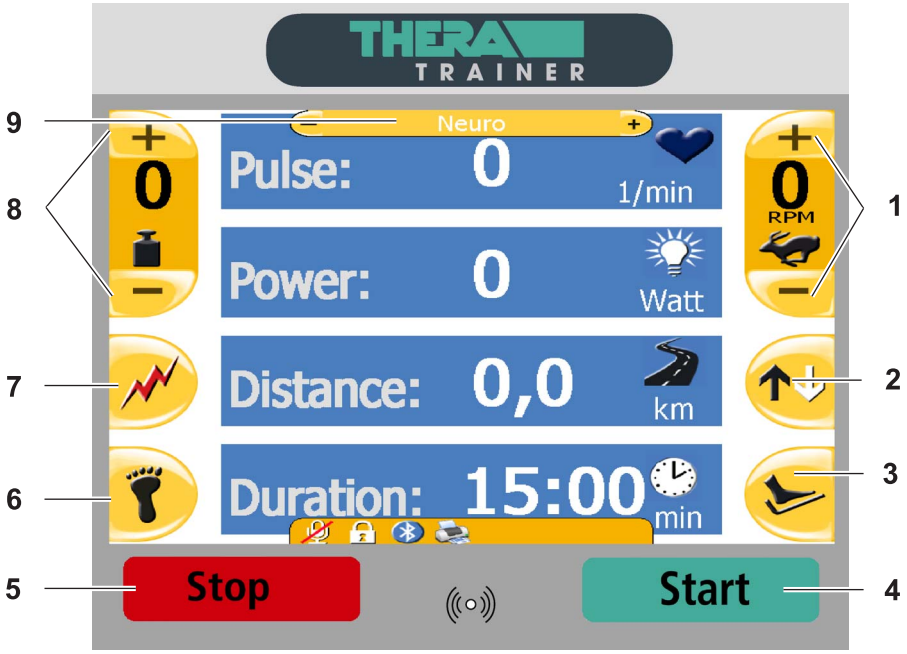
11 USING CONTROL AND DISPLAY UNITS

11.1 Control and display unit with 5.7" colour screen



(1) Buttons Number of revolutions
(2) Button Direction of rotation
(3) Button Easy entry
(4) START button
(5) STOP button
(6) Switch button Leg/upper body exerciser
(7) Button Anti-spasm-control
(8) Buttons Exercising resistance

11.2 Control and display unit with 10.4" colour screen incl. touch function



(1) Buttons Number of revolutions
(2) Button Direction of rotation
(3) Button Easy entry
(4) START button
(5) STOP button
(6) Switch button Leg/upper body exerciser
(7) Button Anti-spasm-control
(8) Buttons Exercising resistance
(9) Button Switch training program

Note

The control and display unit with 10.4" colour screen incl. touch function uses touchscreen fields; the control and display unit with 5,7" colour screen uses buttons.
The operation of control and display units with 5.7" colour screen is identical to units with 10.4" colour screen.

Functions of control and display unit

START button

▶ Press button: THERA-Trainer tigo starts training session with basic settings.
  – THERA-Trainer tigo starts at 10 rpm.
▶ Press button after interruption (break): Training session is resumed.

STOP button

▶ Press button: THERA-Trainer tigo interrupts current training session (break).
▶ Press button twice: THERA-Trainer tigo stops current training session.
  – Control and display unit shows report of the training session.

Button Easy entry

▶ Press button: Crank moves into first entry position.
▶ First foot rest is down.
▶ Put first foot into foot rest.
▶ Press button again: Crank moves into second entry position.
▶ Second foot rest is down.
▶ Put second foot into foot rest.
▶ Secure first foot with velcro or foot fixing/leg support.
▶ Press button again: Crank moves into first entry position.
▶ Secure second foot with velcro or foot fixing/leg support.
▶ Press START button: Easy entry function is finished.

Button Direction of rotation

▶ Press button: THERA-Trainer tigo changes direction.
THERA-Trainer tigo slows down to 0 rpm and resumes movement in opposite direction with pre-set number of rotations.
❑ Black arrow shows current direction of rotation.

Switch button Leg/upper body exerciser

▶ Press STOP button twice: THERA-Trainer tigo stops current training session.
▶ Press switch button: THERA-Trainer tigo switches from leg to upper body exerciser or the other way round.
  – Symbol Foot lights up: Leg exerciser active.
  – Symbol Hand lights up: Upper body exerciser active.
❑ The switch button is inactive during training sessions or if no upper body exerciser is installed.
❑ Leg and arm exercise is not possible at the same time.

Button Anti-spasm-control

▶ Press button: THERA-Trainer tigo deactivates anti-spasm-control.
  – Symbol Lightning is inactive (grey lightning).
▶ Press button again: THERA-Trainer tigo activates anti-spasm control.
  – Symbol Lightning is active (red lightning).

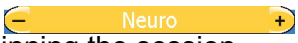
Button Exercising resistance

▶ Press button +: THERA-Trainer tigo increases exercising resistance step by step.
▶ Press button -: THERA-Trainer tigo reduces exercising resistance step by step.
▶ Press and hold button: Increase or reduce training resistance continuously until maximum or minimum is reached.
❑ Current exercising resistance is adjustable in 15 steps.
❑ Maximum exercising resistance:
  – leg exerciser: 22 Nm
  – upper body exerciser: 8 Nm
❑ Exercising resistance setting will remain constant within the entire rpm range.
❑ Higher pedalling frequency = higher performance

Button Number of revolutions

- ▶ Press button +: THERA-Trainer tigo increases number of revolutions step by step.
- ▶ Press button -: THERA-Trainer tigo reduces number of revolutions step by step.
- ▶ Press and hold button: Increase or reduce number of revolutions continuously until maximum or minimum is reached.
- ❑ THERA-Trainer tigo starts at 10 rpm.
- ❑ Maximum number of passive revolutions: 60 rpm.

Button Switch training program

- ▶ Press button +/- 

: Allows changing the training program before beginning the session.
  - – Button will be inactive during training session.
- ▶ Select exclusively training programs recommended by doctor, therapist or trained dealer.

Note

Button Switch training program is exclusively available with the control and display unit with 10.4" colour screen.

For control and display unit with 5.7" colour screen, switch training program via sub menu.

Changing training time

- ▶ Press button : THERA-Trainer tigo increases training time by minutes.
- ▶ Press button : THERA-Trainer tigo reduces training time by minutes.
- ▶ Press and hold buttons: Increase or reduce training time continuously until maximum or minimum is reached.

Note

Setting the training time is exclusively possible during a training session.

Note

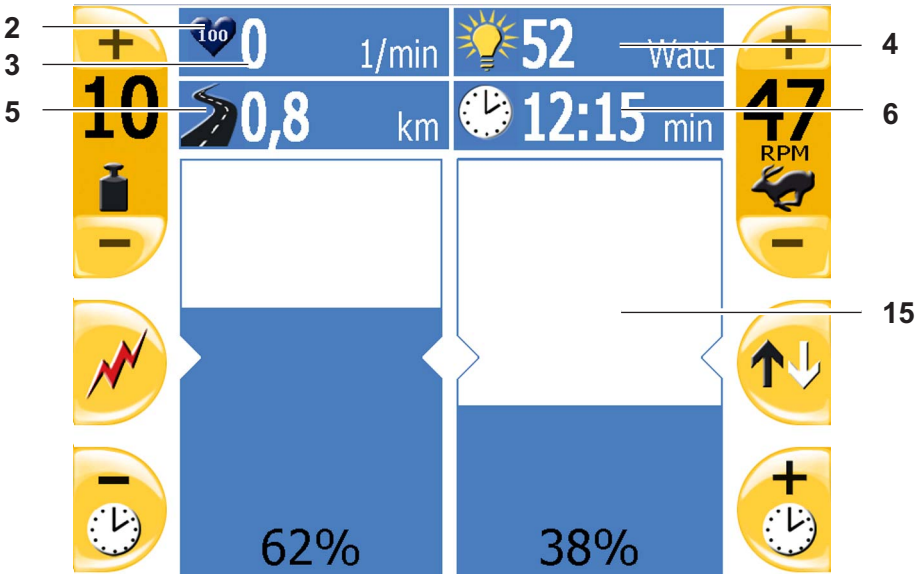
START/STOP buttons are always active.

The sub menu enables the setting of further parameters. This will be done by a doctor, therapist or trained dealer.

11.3 Display units

Display before training session has started

Note



Display during training session

Note

(1) Display Training program
(2) Display Heart rate limit setting
(3) Pulse indicator
(4) Power display
(5) Covered distance
(6) Remaining training time
(7) Status bar
(8) Printer
(9) Icon Group therapy offline
(10) Icon Group therapy online
(11) Bluetooth
(12) Button lock on
(13) Microphone off
(14) Speakers off
(15) Display Biofeedback

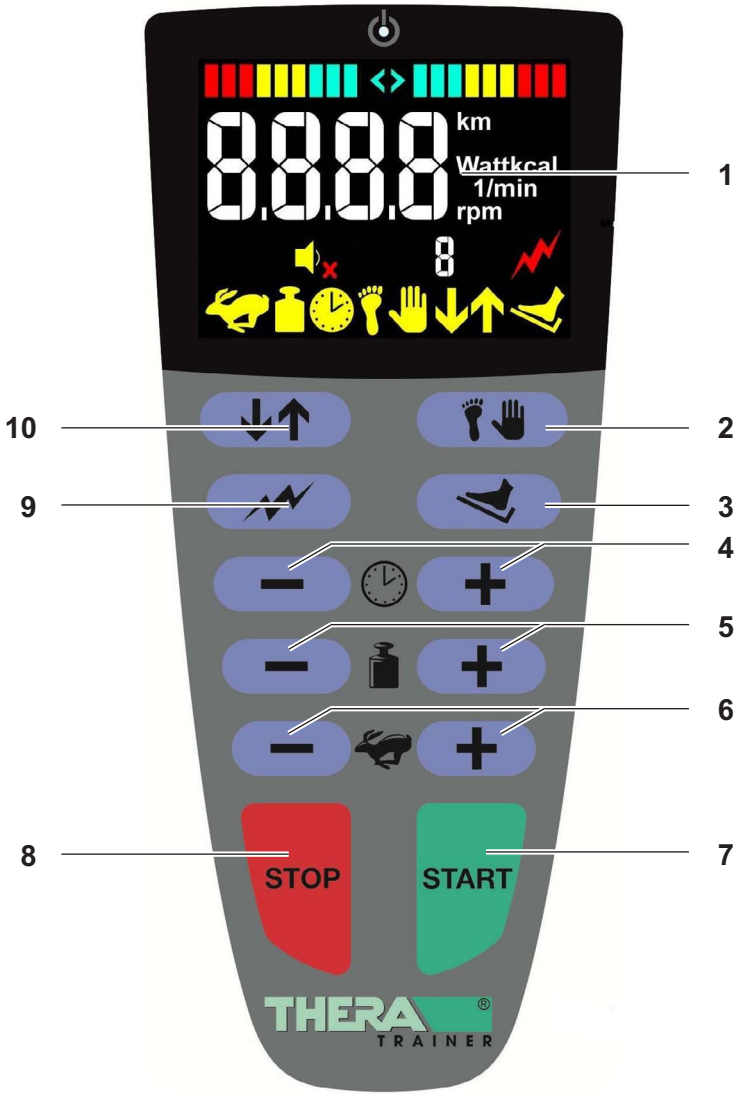
The operation of control and display elements with 5.7" colour screen is identical to units with 10.4" colour screen.

Note

Explanation of display units

Status bar	❑ Shows e.g. button lock, voice-controlled emergency stop, printer connection for training data, microphone sensitivity. ❑ Hidden during training sessions.
Display Training program	❑ Indicates active training program on home screen. ❑ The indication of which training program is currently activated will be hidden during active training.
Display Heart rate limit setting	❑ The heart symbol shows the heart rate limit setting.
Pulse indicator	❑ Exclusively in combination with control and display unit and cardio-pulse-set. ❑ Indicates the user's current pulse rate. ❑ Reduces exercising resistance as soon as the set pulse rate is reached. ❑ The user's pulse rate during the training session always stays below the limit set by the doctor.
Power display	❑ Indicates performance in Watt. ❑ Exclusively for active muscular exercise.
Covered distance	❑ Indicates entire covered distance in km.
Remaining training time	❑ Indicates remaining training time.
Printer	❑ Indicates that the option Printer for Training Documentation for printing the training report is available.
Icon Group therapy online/ offline	❑ Group therapy online (green): Connection between THERA-Trainer tigo and Mini-PC. ❑ Group therapy offline (red): No connection between THERA-Trainer tigo and Mini-PC.
Bluetooth	❑ Indicates a Bluetooth connection.
Microphone off	❑ Indicates that the microphone is deactivated.
Button lock on	❑ Indicates that the button lock is activated.
Speakers off	❑ Indicates that the speakers are deactivated.
Display Biofeedback	❑ Shows biofeedback Symmetry bar or Symmetry road as factory setting. ❑ It is still possible to adjust settings for 30 secIt is possible to set further biofeedback illustrations in the sub menu. ▶ Use START button to change between Symmetry bar and Symmetry road.

11.4 Control and display unit with 2.7" colour screen



(1) Display Training parameters
(2) Switch button Leg/upper body exerciser
(3) Button Easy entry
(4) Buttons Training time
(5) Buttons Exercising resistance
(6) Buttons Number of revolutions
(7) START button
(8) STOP button
(9) Button Anti-spasm-control
(10) Button Direction of rotation

Functions of control and display unit

START button

- ▶ Press button: THERA-Trainer tigo starts training session with basic settings.
  - – THERA-Trainer tigo starts at 10 rpm.
- ▶ Press button after interruption (break): Training session is resumed.
- ▶ Press button during training session: Display change.

STOP button

- ▶ Press button: THERA-Trainer tigo stops current training session.
- ▶ Press button again: THERA-Trainer tigo indicates covered distance in km.
- ▶ Press button once again: THERA-Trainer tigo indicates energy consumption in kcal.
- ❑ Display of training data is possible until
  - – START button is pressed again.
  - – energy supply is interrupted.
  - – THERA-Trainer tigo goes into stand-by mode.

Display Training parameters

- ❑ Indicates training parameters alternatingly during the training session.

Button Number of revolutions

- ▶ Press button +: Symbol Rabbit flashes. THERA-Trainer tigo increases number of revolutions step by step.
- ▶ Press button -: Symbol Rabbit flashes. THERA-Trainer tigo reduces number of revolutions step by step.
- ▶ Press and hold button: Increase or reduce number of revolutions continuously until maximum or minimum is reached.
- ❑ THERA-Trainer tigo starts at 10 rpm.
- ❑ Maximum number of passive revolutions: 60 rpm.

Button Exercising resistance

- ▶ Press button +: Symbol Weight flashes. THERA-Trainer tigo increases exercising resistance step by step.
- ▶ Press button -: Symbol Weight flashes. THERA-Trainer tigo reduces exercising resistance step by step.
- ▶ Press and hold button: Increase or reduce training resistance continuously until maximum or minimum is reached.
- ❑ Current exercising resistance is adjustable in 15 steps.
- ❑ Maximum exercising resistance:
  - – leg exerciser: 22 Nm
  - – upper body exerciser: 8 Nm
- ❑ Exercising resistance setting will remain constant within the entire rpm range.
- ❑ Higher pedalling frequency = higher performance

Button Training time

- ▶ Press button +: Symbol Clock flashes. THERA-Trainer tigo increases training time by minutes.
- ▶ Press button -: Symbol Clock flashes. THERA-Trainer tigo reduces training time by minutes.
- ▶ Press and hold button: Increase or reduce training time continuously until maximum or minimum is reached.

Button Direction of rotation

- ▶ Press button: Symbol Direction arrow flashes. THERA-Trainer tigo changes direction. THERA-Trainer tigo slows down to 0 rpm and resumes movement in opposite direction with pre-set number of rotations.
- ❑ Yellow arrow indicates direction of rotation.

Switch button Leg/upper body exerciser

- ▶ Press STOP button: THERA-Trainer tigo stops current training session.
- ▶ Press switch button: THERA-Trainer tigo switches from leg to upper body exerciser or the other way round.
  - – Symbol Foot lights up: Leg exerciser active.
  - – Symbol Hand lights up: Upper body exerciser active.
- ❑ The switch button is inactive during training sessions or if no upper body exerciser is installed.
- ❑ Leg and arm exercise is not possible at the same time.

Button Easy entry

- ▶ Press button: Crank moves into first entry position.
  - – First foot rest is down.
- ▶ Put first foot into foot rest.
- ▶ Press button again: Crank moves into second entry position.
  - – Second foot rest is down.
- ▶ Put second foot into foot rest.
- ▶ Secure first foot with velcro or foot fixing/leg support.
- ▶ Press button again: Crank moves into first entry position.
- ▶ Secure second foot with velcro or foot fixing/leg support.
- ▶ Press START button: Easy entry function is finished.

Button Anti-spasm-control

- ▶ Press button: THERA-Trainer tigo deactivates anti-spasm-control.
  - – Symbol Lightning is inactive (hidden).
- ▶ Press button again: THERA-Trainer tigo activates anti-spasm control.
  - – Symbol Lightning is active (red lightning).

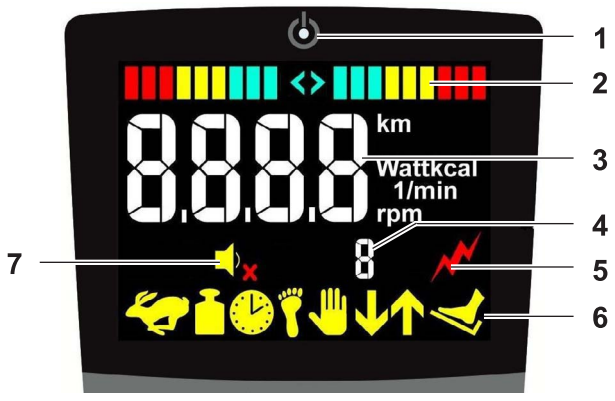
Saving training settings

It is possible to save individual training settings before starting:

- ❑ direction of rotation
- ❑ training time
- ❑ resistance
- ❑ leg/upper body exerciser

Every subsequent training session will start with these settings. An interruption of the energy supply will reset the settings to the factory settings.

11.5 Display units



(1) Display stand-by mode
(2) Symmetry display
(3) Display Training parameters
(4) Display Spasm detection
(5) Display Spasticity ON/OFF
(6) Display Status bar
(7) Display Key sound ON/OFF

Explanation of display units

Display stand-by mode

- ❑ If no button of THERA-Trainer tigo has been pressed for more than 10 minutes,
  - screen light of control and display unit switches off.
  - red LED **1** lights up.
- ▶ Press any button to switch THERA-Trainer tigo into operating mode.

After a self-test, THERA-Trainer tigo is ready for use.

Symmetry display

- ❑ Symmetry display:
  - divided into three colour areas (green, yellow, red)
  - one bar means 5% asymmetry
  - direction triangle indicates the side that must be more active.
- ❑ Symmetry display appears exclusively during leg exercise.

Display Training parameters

- ❑ Display Training parameter alternates during training session:
  - number of revolutions (1/min)
  - performance (Watt)
  - energy consumption (kcal)
  - distance (km)
  - remaining training time

Display Spasm detection

- ❑ Shows currently set step of spasm detection
- ▶ Have spasm detection set in sub menu by doctor, therapist or trained dealer.

Display Spasticity ON/OFF

- ❑ Spasm detection active: Red spasm symbol lights up.
- ❑ Spasm detection inactive: No symbol is displayed.

Note

Even when the spasm detection function is deactivated, it will detect extreme changes of movement (blocking of cranks, extreme power fluctuations). For safety reasons, a detected extreme change will be treated like a spasm.

Display Status bar

- ❑ Symbol Number of revolutions
- ❑ Symbol Resistance
- ❑ Symbol Training time
- ❑ Symbol Leg exerciser active
- ❑ Symbol Upper body exerciser active
- ❑ Symbol Leg and upper body exerciser active
- ❑ Symbol Direction of rotation
- ❑ Symbol Easy entry active

Display Key sound ON/OFF

- ❑ Key sound ON: Loudspeaker displayed.
- ❑ Key sound OFF: Crossed-out loudspeaker displayed.

EXPERT SECTION

Note

The expert section addresses trained dealers, doctors and therapists and describes how to use the THERA-Trainer tigo.

12 START-UP

12.1 Unpacking

Unpack THERA-Trainer tigo:

- ▶ Remove THERA-Trainer tigo from packaging.
- ▶ Check THERA-Trainer tigo incl. all accessories/options for transport damage.
- ▶ Check if delivery is complete.
- ▶ Inform supplier or forwarding agent immediately about any damage.

12.2 Installation THERA-Trainer tigo

Installation of leg support

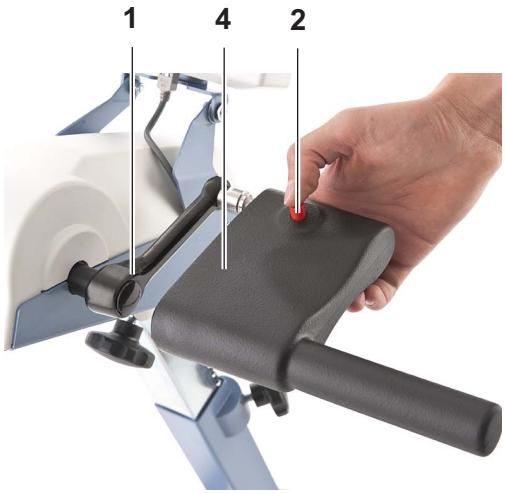
Warning

Risk of injury due to missing cushion!
If no leg support is being used:

- ▶ Fold securing system of leg support behind foot rest (secured by magnet).

- ▶ Fold up securing system **1** of leg support by foot rest.
- ▶ Loosen knurled head screw **2**.
- ▶ Insert leg support **3** the right way around into slot of securing system.
- ▶ Tighten knurled head screw.

Installing grips and arm rest



- ▶ Press locking bolt **2**.
- ▶ Slide therapy grips/arm rest **3** or grip adapter **4** onto crank **1** up to the stop.
- ▶ Release locking bolt.
- ▶ Make sure that locking bolts audibly click into place.
- ▶ When installing the grip adapter, make sure that lock button of cranks locks audibly.

Note

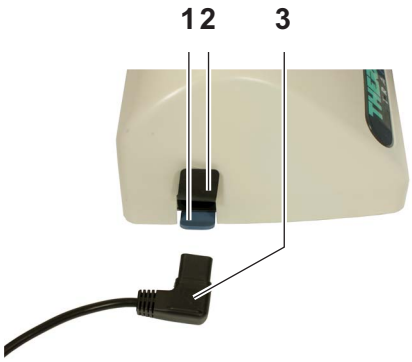
The grip adapter makes the upper body exerciser a top part with safety handle function.

Connecting the main cable

Caution

Material damage due to incorrect installation!

- ▶ Make sure that plug is plugged in correctly when connecting cables.
- ▶ Observe position of plug.



- ▶ Use exclusively power plug supplied by the manufacturer.
- ▶ Open protective lid **2**.
- ▶ Connect plug **3** to port **1**.
- ▶ Plug power plug **4** into socket outlet.

THERA-Trainer tigo is ready for use.

12.3 Switching on or off

Switching on

To switch on the THERA-Trainer tigo:

- ▶ Plug power plug into socket outlet.
- ▶ Use exclusively power plug supplied by the manufacturer.

After the self-test, THERA-Trainer tigo is ready for use.

Control and display unit with 2.7" colour screen will switch to stand-by mode when switched on.

- ▶ Press **START button** on control and display unit with 2.7" colour screen.

Stand-by mode

THERA-Trainer tigo will switch to stand-by mode when

- ❑ no button is pressed for a certain period of time (not during training).
- ❑ the STOP button is pressed for a certain period of time.

The screen light switches off.

To activate THERA-Trainer tigo:

- ▶ Press any button.

After the self-test, THERA-Trainer tigo is ready for use.

Switching off

To switch off the THERA-Trainer tigo:

- ▶ Pull power plug from socket outlet.

12.4 Transport THERA-Trainer tigo

Warning

Risk of injury due to incorrect transport!

- ▶ Pull THERA-Trainer tigo with transport castors exclusively on even and stable floors.
- ▶ Have at least one other person help with moving the THERA-Trainer tigo up or down stairs.

Transport THERA-Trainer tigo with device base incl. transport castors as follows:

- ▶ Tilt THERA-Trainer tigo on device base incl. transport castors **3**.
- ▶ Pull THERA-Trainer tigo to desired place.

Transport THERA-Trainer tigo with flat device base incl. transport castors as follows:

- ▶ Have at least one other person help with moving the THERA-Trainer tigo.
- ▶ Lift THERA-Trainer tigo by transport strap **1** and under drive unit **2**.
- ▶ Put THERA-Trainer tigo down in desired place.

12.5 Start-up

Starting up the THERA-Trainer tigo:

- ▶ Plug power plug into socket outlet.

Screen lights up.
Control and display unit does a self-test.

THERA-Trainer tigo is ready for use.

13 OPERATION

13.1 Preparation for training

Danger

Danger to life due to cardiac pacemaker!
Before the first training session
- ▶ Consult the manufacturer of the pacemaker about potential complications.
- ▶ Consult a doctor.
- ▶ Observe emissions (see Electromagnetic emission).

Warning

Risk of injury due to THERA-Trainer tigo tipping over!
- ▶ Do not use THERA-Trainer tigo for training in transport condition.

Warning

Risk of injury due to insufficient preparation!
- ▶ Disinfect THERA-Trainer tigo before every training (see Cleaning and disinfection).
- ▶ Make sure that cranks are turning freely.

Warning

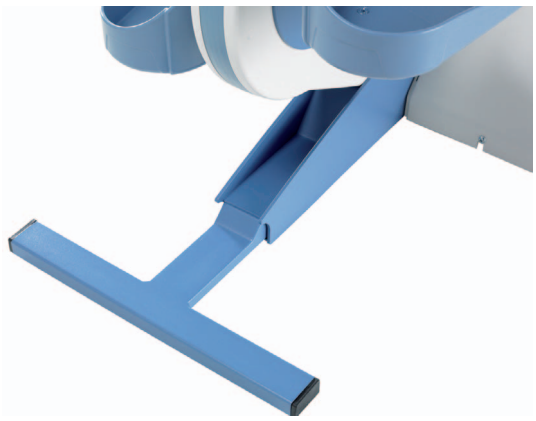
Risk of injury by trapped shoelaces!
- ▶ Wear exclusively closed shoes when training.
- ▶ Wear exclusively shoes without laces when training.

13.2 Device base unit

Device base with transport castors

- ❑ Extendable device base for enlarging the base area.
- ❑ Large transport castors for easier transport and positioning.
- ❑ Height of device base, incl. castors: 74 mm

Device base flat



- ❑ Recommended for active or sport wheelchairs with fixed footboards.
- ❑ Without transport castors.
- ❑ Height of device base: 24 mm

Flat device base with wheel set

- ❑ Recommended for active or sport wheelchairs with fixed footboards.
- ❑ Incl. two transport castors for easier transport.
- ❑ Height of device base: 24 mm

Height adjustment

Note

THERA-Trainer tigo permits height adjustment between 50 and 150 mm without tools.

To reduce the distance between user and foot rests even more, it is possible to set different heights in the front and in the rear.

To adapt height of THERA-Trainer tigo to seat height:

- ▶ Release locking-pin **1**.
- ▶ Tilt THERA-Trainer tigo and relieve rubber foot **2**.
- ▶ Pull out locking-pin **1** and set rubber foot **2** to required height.
- ▶ Make sure that locking-pin **1** latches.
- ▶ Tighten locking-pin **1**.
- ▶ Repeat with the other rubber feet.

Self-operable tip-up protection

To prevent the chair/wheelchair from tipping over during the training session, attach the tip-up protection as follows:

- ▶ Move chair/wheelchair in front of THERA-Trainer tigo.
- ▶ Push down red lever **4** on tip-up protection **3**.
- ▶ Pull out belt **2** by hook **1** .
- ▶ Attach hook **1** to a stable part of the chair/wheelchair frame at an angle of approx. 30°.
- ▶ Make sure that hook is safely attached.

The belt will tighten automatically.

Release tip-up protection as follows:

- ▶ Push down red lever **4** on tip-up protection **3**.
- ▶ Pull up the hook and unhook it from chair/wheelchair frame.
- ▶ Let belt retract completely.

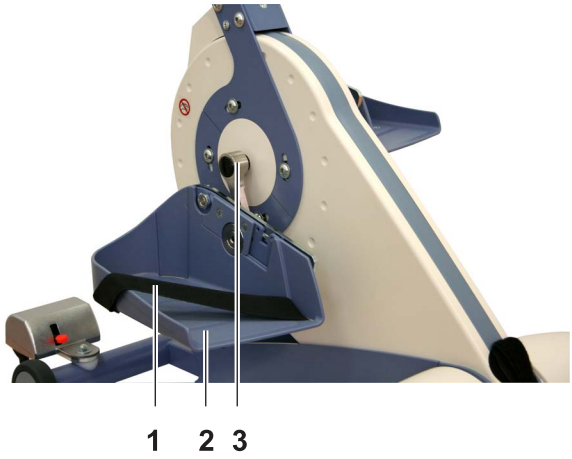
13.3 Foot fixing/leg support

Warning

Risk of injury through unprotected metal parts!

▶ Do not remove foot rests for arm exercise.

Foot rests with crank



❑ Fixed crank,110 mm

Secure feet in foot rests with crank **3** as follows:

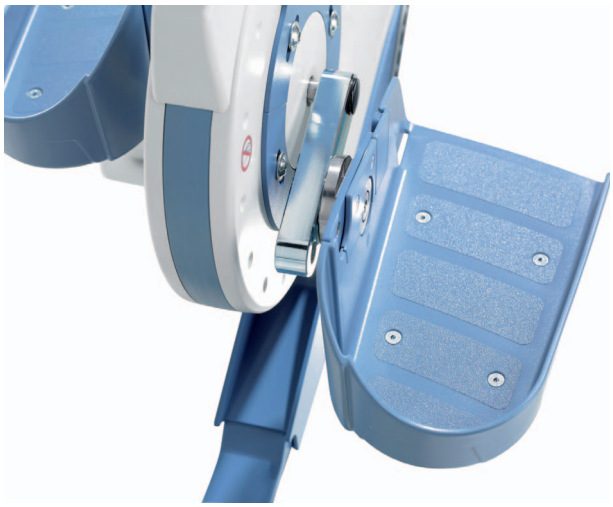
▶ Make sure that THERA-Trainer tigo is not in training mode. If necessary, press STOP button of control and display unit twice.

▶ Make sure that feet are correctly positioned in foot rests **2**.

▶ Wrap velcros **1** tightly around back of foot.

▶ Fasten velcros on outside of foot rests.

Foot rests with 2-stepped radius adjustment



For settings of 2-stepped crank radius, see instructions for initial start-up.

Secure feet in foot rests as follows:

- ▶ Make sure that THERA-Trainer tigo is not in training mode.
  If necessary, press STOP button of control and display unit twice.
- ▶ Make sure that feet are correctly positioned in foot rests.
- ▶ Wrap velcros tightly around back of foot.
- ▶ Fasten velcros on outside of foot rests.

Foot rests with stepless radius adjustment

Note

The stepless radius adjustment is prescribed for users with limited joint mobility (contractures). Stepless radius adjustment permits reaching the best results possible for every user depending on his individual mobility.

Set stepless crank radius as follows:

- ▶ Pull power plug from socket outlet.
- ▶ Make sure that THERA-Trainer tigo is switched off.
- ▶ Make sure that feet are not in foot rests.
- ▶ Loosen retaining screws **2** of the radius adjustment system with provided T-key **1**.
- ▶ Set crank radius on right-hand and left-hand crank as required (65-115 mm).
- ▶ Tighten safety screws.
- ▶ Before every training session, make sure that retaining screw is securely tightened.

Note

It is possible to set different lengths for the right-hand and left-hand crank, e.g. if the user has legs of different length or mobility. When using biofeedback, no significant symmetry report is possible.

Secure feet in foot rests as follows:

- ▶ Make sure that feet are correctly positioned in foot rests.
- ▶ Wrap velcros tightly around back of foot.
- ▶ Fasten velcros on outside of foot rests.

Foot fixing

Note

For unassisted, quick and simple securing of feet in foot rests (e.g. in case of paralysis, spasticity, etc.).

Secure feet in foot rests as follows:

- ▶ Make sure that THERA-Trainer tigo is not in training mode.
  If necessary, press STOP button of control and display unit twice.
- ▶ Press release lever **3** on foot fixing **2**.

Retaining bracket **1** opens.

- ▶ Put feet into foot rests.
- ▶ Make sure that feet are correctly positioned in foot rests.
- ▶ Use velcro tape to attach cushion of foot fixing to retaining bracket in optimal position.
- ▶ Press down foot fixing and secure feet.

Release foot fixing as follows:

- ▶ Press retaining bracket **1** slightly down and activate release lever **3** at the same time.

Retaining bracket opens.

Leg support

The leg support is mandatory for users with paralysis, spasticity or weak legs. **Note**

Apply leg support as follows:

- ▶ Make sure that THERA-Trainer tigo is not in training mode. If necessary, press STOP button of control and display unit twice.
- ▶ Put feet into foot rests.
- ▶ Make sure that feet are correctly positioned in foot rests.
- ▶ Loosen knurled head screw of leg support.
- ▶ Set leg support to fit calf height.
- ▶ Tighten knurled head screw.
- ▶ Use velcro **1** to secure calves on leg support **2**.
- ▶ Make sure that the user is able to remove the velcro without assistance if necessary, or that an assistant is available.

13.4 Upper body exerciser/safety handle

Upper body exerciser 1

- ❑ Permits active or passive exercise for the entire upper body.
- ❑ Changing the different types of therapy grips and arm rests allows the training to be adapted to fit each user's individual needs.
- ❑ Upper body exerciser short:
  The short upper body exerciser is especially suitable for users with a short upper body or a low seated height. The height setting is lower in comparison with the upper body exerciser (see Setting height of upper body exerciser/ safety handle).
- ▶ Before starting the training with the upper body exerciser, pull out device base at least 10 cm.

Short crank

- ❑ recommended for spasticities and contractures in the upper body.
- ❑ required when using the upper body exerciser.
- ❑ length approx. 75 mm.

Long crank

- ❑ recommended for amyosthenia and lack of coordination of the upper body.
- ❑ required when using the upper body exerciser.
- ❑ length approx. 110 mm.

Safety handle 2

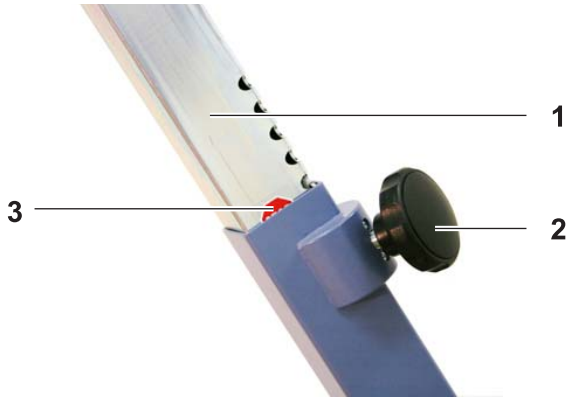
- ❑ Provides the user with safe support during training
  (e.g. for active training, spasticities or lack of upper body stability).
- ❑ Height and inclination of the safety handle are adjustable.
- ❑ The safety handle is equipped with an anti-slip handle made of foam rubber.
- ❑ Safety handle short:
  The short safety handle is especially suitable for users with a short upper body or a low seated height. The height setting is lower in comparison with the safety handle (see Setting height of upper body exerciser/safety handle).

Setting height of upper body exerciser/safety handle

Warning

Risk of crushing!

▶ Take care not to pinch any fingers when pushing the pipes together.



To adapt upper body exerciser/safety handle individually to body size and sitting position:

▶ Loosen locking-pin **2** on pipe **1** by approx. one revolution.
▶ Pull up upper body exerciser/safety handle and relieve locking-pin.
▶ Pull out locking-pin.
▶ Set height of body exerciser/safety handle so that crank axis is at shoulder height.
▶ Pull out supporting arm pipe until centre of STOP mark **3** at a maximum.
▶ Make sure that the height of body exerciser/safety handle is set so that the knees do not collide with the body exerciser/safety handle.
▶ Let go of locking-pin.
▶ Make sure that locking-pin latches.
▶ Tighten locking-pin.

Adjustment ranges:

❑ Upper body exerciser/safety handle: 91.5 cm – 100.5 cm
❑ Upper body exerciser short/safety handle short: 87 cm – 94 cm

Setting the distance of upper body exerciser

Note *The distance is optimal when the user's arms are slightly bent when training.*

To set the distance:

- ▶ Loosen star-shaped handle **1** below upper body exerciser.
- ▶ Put upper body exerciser in required horizontal position.
- ▶ Tighten star-shaped handle.

Locking/unlocking crank of upper body exerciser

Note *The cranks are locked when using the THERA-Trainer tigo as a leg exerciser to serve as a safety handle for the user.*

When using the THERA-Trainer tigo as an upper body exerciser, the respective therapy grips or arm rests must be installed and the crank unlocked.

To lock crank:

- ▶ Pull out lock button **1** on lower side of upper body exerciser **2**.
- ▶ Turn lock button by 90° and let go.
- ▶ Turn crank so that it is in horizontal position.
- ▶ Make sure that lock button audibly clicks into place.
- ▶ Make sure that crank locks audibly and does not move any more.

Crank is locke

To unlock crank:

- ▶ Pull out lock button on lower side of upper body exerciser.
- ▶ Turn lock button by 90° and let go.

Crank is unlocked.

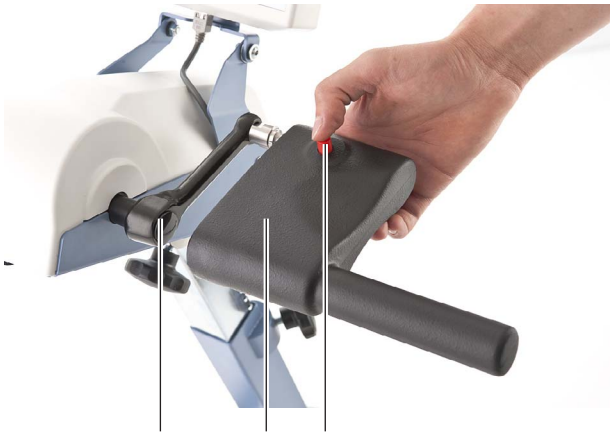
13.5 Hand/arm fixing

Grip adapter

Caution

Material damage due to incorrect use!

▶ Do not use grip adapter to support body weight.



The grip adapter makes the upper body exerciser a top part with safety handle function.

Install grip adapter as follows:

▶ Press locking bolt **3**.
▶ Slide grip adapter **2** onto crank **1** up to stop.
▶ Release locking bolt.
▶ Make sure that locking bolt latches.
▶ Make sure that crank locks audibly.
▶ The grip adapter is suitable exclusively for holding.

Therapy grips

Therapy grips

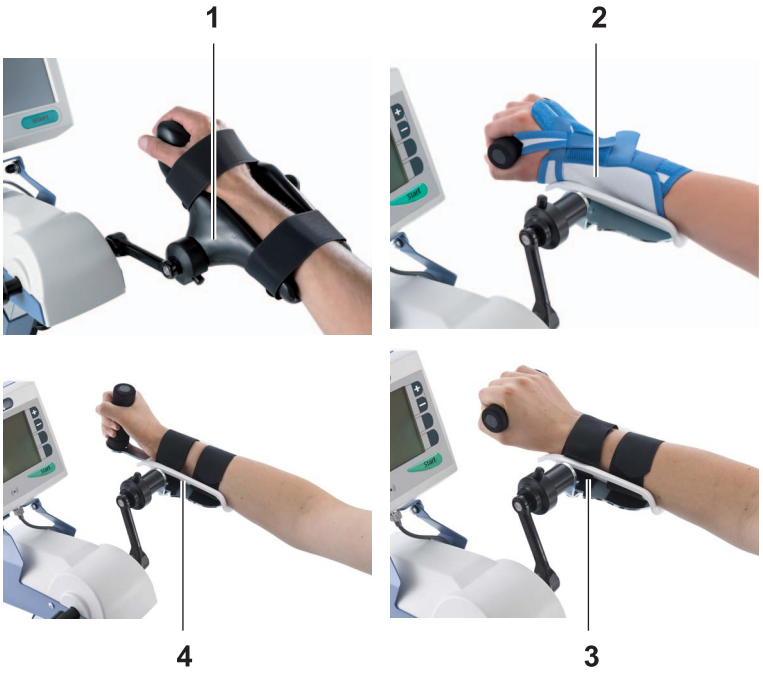
❑ offer variable grip positions.
❑ are exclusively usable when the user's ability to safely hold the grips is sufficient.

▶ For installing or changing the therapy grips, see Installing grips and arm rest.
▶ Have a doctor or therapist adjust the therapy grips individually.
▶ If necessary, use wristband to secure arm on therapy grips.

Arm rests

Warning

Risk of injury due to inadequate distance!
To protect thumb against injuries:
▶ When using a THERA-Trainer tigo with control and display unit with 10.4" colour screen, secure thumb on arm rest with velcro.



Variants:

- ❑ Arm rests for therapy grips **1**
- ❑ Wristbands for arm rests with bar-shaped grips **2**
- ❑ Arm rests with bar-shaped grips, horizontal **3**
- ❑ Arm rests with bar-shaped grips, vertical **4**

Arm rests serve to secure the arms of users with

- ❑ symptoms of paralysis.
- ❑ increased muscle tone.
- ❑ contractures or joint deformities.

Secure arms as follows:

- ▶ Have a doctor or therapist adjust the arm rests individually.
- ▶ Put arm into plugged-in arm rest of upper body exerciser.
- ▶ Secure in arm rest with velcros.

-OR-

- ▶ Put arm rest on a table or the user's thigh.
- ▶ Secure arm in arm rest with velcros.
- ▶ Plug arm rest onto crank of upper body exerciser.

Wristbands for therapy grips/safety handle

Wristbands for therapy grips/safety handle permit

- ❑ quick and simple securing of paralysed/weak hands.
- ▶ For installing or changing the therapy grips, see Installing grips and arm rest.
- ▶ For cleaning the wristbands, see Cleaning and disinfection.

13.6 Safety devices

Warning

Risk of injury due to damaged safety equipment!

- ▶ Before every training, make sure that safety equipment is working correctly.
- ▶ In case of any malfunction, have the unit repaired by a trained dealer.

Voice-controlled emergency stop

Note

The voice-controlled emergency stop is exclusively usable in combination with control and display unit with 5.7” or 10.4” colour screen.

When the arms are fixed in the upper body exerciser so that manual control is not possible:

- ▶ Stop THERA-Trainer tigo by a loud shout.
- ▶ Set microphone sensitivity in sub menu Basic settings/Configuration (see Sub menu Control and display unit with 5.7" or 10.4" colour screen).

Anti-spasm-control

Possible causes for response of anti-spasm-control:

- ❑ Recognised spasm
- ❑ Irregular pedalling
- ❑ Uncontrollable muscular activity
- ❑ Set motor power exceeded

When anti-spasm-control responds:

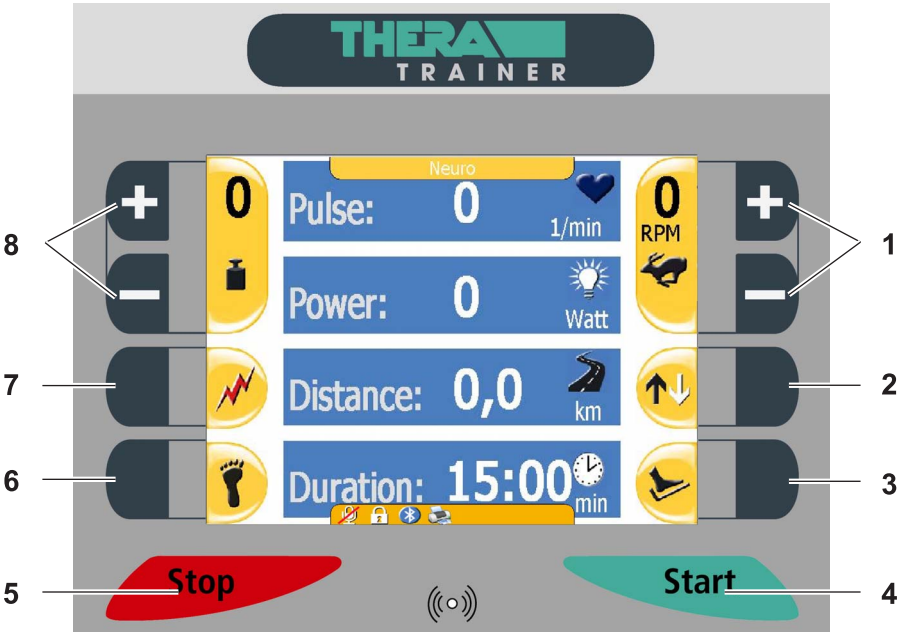
- ❑ THERA-Trainer tigo interrupts power supply to cranks.
- ❑ Cranks are freely movable.
- ❑ SPASTICITY or MAX. MOTOR POWER EXCEEDED or spasm symbol appears on control and display unit.
- ❑ After 5 seconds, THERA-Trainer tigo restarts at a speed reduced by 5 rpm.
- ▶ Set crank direction in sub menu after a spasm was detected (see Sub menu Control and display unit with 5.7" or 10.4" colour screen or see Sub menu control and display unit with 2.7" colour screen).
- ▶ Continue training.

If anti-spasm-control responds repeatedly:

- ▶ Stop training session.
- ▶ Restart THERA-Trainer tigo.
- ▶ Reduce distance between seat and THERA-Trainer tigo.
- ▶ Reduce crank length (see Foot fixing/leg support).
- ▶ Reduce number of revolutions (see Using control and display units).
- ▶ Increase motor power (see Motor power/joint force).

14 USING CONTROL AND DISPLAY UNITS

Control and display unit with 5.7" colour screen



(1) Buttons Number of revolutions
(2) Button Direction of rotation
(3) Button Easy entry
(4) START button
(5) STOP button
(6) Switch button Leg/upper body exerciser
(7) Button Anti-spasm-control
(8) Buttons Exercising resistance

Control and display unit with 10.4" colour screen incl. touch function

(1) Buttons Number of revolutions
(2) Button Direction of rotation
(3) Button Easy entry
(4) START button
(5) STOP button
(6) Switch button Leg/upper body exerciser
(7) Button Anti-spasm-control
(8) Buttons Exercising resistance
(9) Button Switch training program

Note

The control and display unit with 10.4" colour screen incl. touch function uses touchscreen fields; the control and display unit with 5,7" colour screen uses buttons.
The operation of control and display units with 5.7" colour screen is identical to units with 10.4" colour screen.

Functions of control and display units

START button

▶ Press button: THERA-Trainer tigo starts training session with basic settings.
– THERA-Trainer tigo starts at 10 rpm.
▶ Press button after interruption (break): Training session is resumed.

STOP button

▶ Press button: THERA-Trainer tigo interrupts current training session (break).
▶ Press button twice: THERA-Trainer tigo stops current training session.
– After at least 1 minute of exercise, control and display unit shows report of the training session.

Button Easy entry

- ❑ Makes it easier to get into the THERA-Trainer tigo.
- ❑ Button highlighted in red indicates that easy entry function is activated.
- ▶ Press button: Crank moves into first entry position.
  - – First foot rest is down.
- ▶ Put first foot into foot rest.
- ▶ Press button again: Crank moves into second entry position.
  - – Second foot rest is down.
- ▶ Put second foot into foot rest.
- ▶ Secure first foot with velcro or foot fixing/leg support.
- ▶ Press button again: Crank moves into first entry position.
- ▶ Secure second foot with velcro or foot fixing/leg support.
- ▶ Press START button: Easy entry function is finished.

Button Number of revolutions

- ▶ Press button +: THERA-Trainer tigo increases number of revolutions step by step.
- ▶ Press button -: THERA-Trainer tigo reduces number of revolutions step by step.
- ▶ Press and hold button: Increase or reduce number of revolutions continuously until maximum or minimum is reached.
- ❑ THERA-Trainer tigo starts at 10 rpm.
- ❑ Maximum number of passive revolutions: 60 rpm.

Button Direction of rotation

- ▶ Press button: THERA-Trainer tigo changes direction. THERA-Trainer tigo slows down to 0 rpm and resumes movement in opposite direction with pre-set number of rotations.
- ❑ Black arrow shows current direction of rotation.

Switch button Leg/upper body exerciser

- ▶ Press STOP button twice: THERA-Trainer tigo stops current training session.
- ▶ Press switch button: THERA-Trainer tigo switches from leg to upper body exerciser or the other way round.
  - – Symbol Foot lights up: Leg exerciser active.
  - – Symbol Hand lights up: Upper body exerciser active.
- ❑ The switch button is inactive during training sessions or if no upper body exerciser is installed.
- ❑ Leg and arm exercise is not possible at the same time.

Button Anti-spasm-control

- ▶ Press button: THERA-Trainer tigo deactivates anti-spasm-control.
  - – Symbol Lightning is inactive (grey lightning).
- ▶ Press button again: THERA-Trainer tigo activates anti-spasm control.
  - – Symbol Lightning is active (red lightning).

Button Exercising resistance

- ▶ Press button +: THERA-Trainer tigo increases exercising resistance step by step.
- ▶ Press button -: THERA-Trainer tigo reduces exercising resistance step by step.
- ▶ Press and hold button: Increase or reduce training resistance continuously until maximum or minimum is reached.
- ❑ Current exercising resistance is adjustable in 15 steps.
- ❑ Maximum exercising resistance:
  - – leg exerciser: 22 Nm
  - – upper body exerciser: 8 Nm
- ❑ Exercising resistance setting will remain constant within the entire rpm range.
- ❑ Higher pedalling frequency = higher performance

Button Switch training program

❑ Shows current training program before the training session starts.

▶ Press button +/-

: Allows changing the training program before beginning the session when using a 10.4" colour screen.

– Button will be inactive during training session.

Note

Button Switch training program is exclusively available with the control and display unit with 10.4" colour screen.

For control and display unit with 5.7" colour screen, switch training program via sub menu.

Sub menu

▶ Press button combination STOP button + button : THERA-Trainer tigo switches to sub menu.

▶ Activate sub menu button for quick access in sub menu Basic settings/Configuration.

❑ Switching to sub menu is exclusively possible before the training session has begun.

Button lock

▶ Press button combination STOP button + button : THERA-Trainer tigo activates button lock.

– It is still possible to adjust settings for 30 seconds after activating the button lock.
– Status bar indicates active button lock by displaying a padlock symbol .

▶ Activate button lock before starting the training session.

▶ Press button combination STOP button + button again: THERA-Trainer tigo deactivates button lock.

Changing training time

▶ Setting the training time is exclusively possible during a training session.

▶ Press button : THERA-Trainer tigo increases training time by minutes.

▶ Press button : THERA-Trainer tigo reduces training time by minutes.

▶ Press and hold buttons: Increase or reduce training time continuously until maximum or minimum is reached.

Note

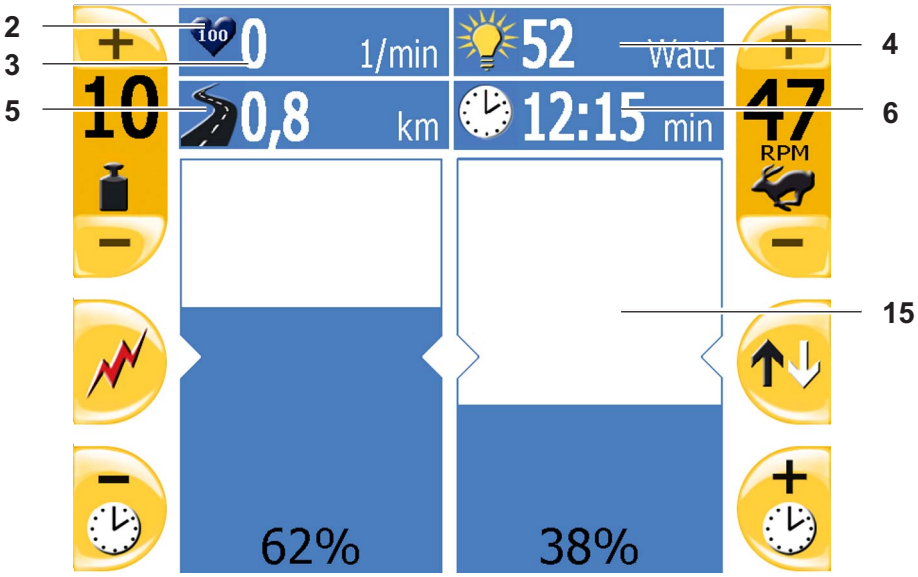
START/STOP buttons are always active.

The sub menu enables the setting of further parameters.

14.1 Display units

Display before training session has started

Note



Display during training session

Note

(1) Display Training program
(2) Display Heart rate limit setting
(3) Pulse indicator
(4) Power display
(5) Covered distance
(6) Remaining training time
(7) Status bar
(8) Printer
(9) Icon Group therapy offline
(10) Icon Group therapy online
(11) Bluetooth
(12) Button lock on
(13) Microphone off
(14) Speakers off
(15) Display Biofeedback

The operation of control and display elements with 5.7" colour screen is identical to units with 10.4" colour screen.

Note

Explanation of display unit

Status bar
- ❑ Shows e.g. button lock, voice-controlled emergency stop, printer connection for training data, microphone sensitivity.
- ❑ Hidden during training sessions.

Display Training program
- ❑ Indicates active training program on home screen.
- ❑ It is not possible to change training programs during training sessions.
- ❑ Hidden during active training sessions.

Display Heart rate limit setting
- ❑ The heart symbol shows the heart rate limit setting.

Pulse indicator
- ❑ Exclusively in combination with control and display unit with cardio-pulse-set.
- ❑ Indicates the user's current pulse rate.
- ❑ Reduces exercising resistance as soon as the set pulse rate is reached.
- ❑ The user's pulse rate during the training session always stays below the limit set by the doctor.

Power display
- ❑ Indicates performance in Watt.
- ❑ Exclusively for active muscular exercise.

Covered distance
- ❑ Indicates entire covered distance in km.

Remaining training time
- ❑ Indicates remaining training time.

Icon Group therapy online/offline
- ❑ Group therapy online (green): Connection between THERA-Trainer tigo and Mini-PC.
- ❑ Group therapy offline (red): No connection between THERA-Trainer tigo and Mini-PC.

When symbol Group therapy offline appears:

▶ Verify that
- – training program Group therapy is selected.
- – Mini-PC is switched on.
- – software Cycling group therapy is open and started on Mini-PC.
- – Mini-PC is within range of Bluetooth connection (about 10 m).
- – Bluetooth stick is correctly connected.
- – Mini-PC is correctly connected to mains.
- – external server is selected in sub menu Configuration.

If no connection is established after the possible causes listed above have been checked and ruled out:

▶ Select a different training program and return to training program Group therapy from there.

Printer
- ❑ Indicates that the option Printer for Training Documentation for printing the training report is available.

Bluetooth
- ❑ Indicates a Bluetooth connection.

Microphone off
- ❑ Indicates that the microphone is deactivated.

Button lock on
- ❑ Indicates that the button lock is activated.

Speakers off
- ❑ Indicates that the speakers are deactivated.

Display Biofeedback

- ❑ Shows biofeedback Symmetry bar or Symmetry road as factory setting.
- ❑ It is still possible to adjust settings for 30 secIt is possible to set further biofeedback illustrations in the sub menu.
- ▶ Use START button to change between Symmetry bar and Symmetry road.

14.2 Sub menu Control and display unit with 5.7" or 10.4" colour screen

The software of the control and display unit with 5.7" or 10.4" colour screen has a sub menu that permits setting several parameters to adapt the THERA-Trainer tigo to the user's individual needs.

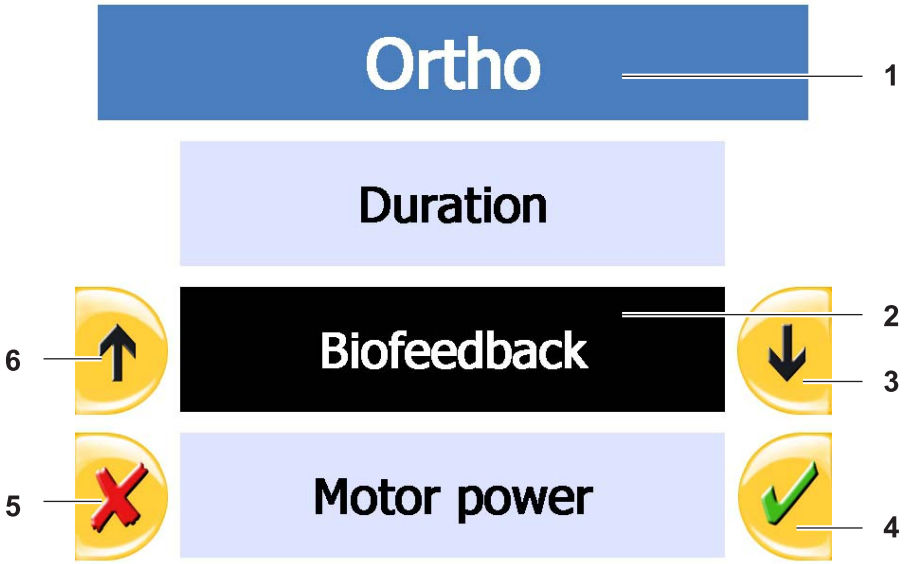
Calling up the sub menu

▶ Press **STOP button** and button at the same time.

Software switches to sub menu.

▶ Activate sub menu button for quick access in sub menu Basic settings/ Configuration .

Navigation of sub menu



Sections of sub menu:

- ❑ Neuro
- ❑ Ortho
- ❑ Cardio
- ❑ Isokinetic
- ❑ Keeper
- ❑ Hedgehog
- ❑ Car
- ❑ Planet
- ❑ Group therapy
- ❑ Basic settings

1. **Current section of sub menu**
2. **Current selection**
3. **Down/reduce**

▶ Move down in direction of arrow.

▶ In menu items where a value is entered (e.g. motor power), the value entered will reduce.

4. **Saving/confirming changes**

▶ Save settings.

▶ In menu items with sub-items, go to next menu item.

5. **Cancel/reject changes**

▶ Go one level up.

6. **Up/increase**

▶ Move up in direction of arrow.

▶ In menu items where a value is entered (e.g. motor power), the value entered will increase.

Menu structure Control and display unit with 5.7" colour screen

1st level	2nd level	Adjustable values, functions	Factory settings
Neuro	Training time	1-180 min.	15 min.
	Direction of rotation automatic	on/off	off
	Biofeedback	Symmetry bar Symmetry road passive off	Symmetry bar (smiley for upper body training)
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Spasm detection	fine medium rough	medium
	Spasm program	forward backward alternating follow	forward
	Autom. speed adaptation	on/off	off
	Heart rate limit	60-150/min	100/min
Ortho	Training time	1-180 min.	15 min.
	Biofeedback (inactive for upper body training)	Symmetry bar Symmetry road passive off	Symmetry bar
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Muscle support	on/off	on
	Heart rate limit	60-150/min	100/min

1st level	2nd level	Adjustable values, functions	Factory settings
Cardio	Training time	1-180 min.	15 min.
	Biofeedback (inactive for upper body training)	Symmetry bar Symmetry road passive off	Symmetry bar
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Heart rate limit	60-150/min	100/min
Isokinetic	Training time	1-180 min.	15 min.
	Biofeedback	Symmetry bar Symmetry road passive off	Symmetry bar (smiley for upper body training)
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Spasm detection	fine medium rough	medium
	Spasm program	forward backward alternating follow	forward
	Heart rate limit	60-150/min	100/min
Basic settings	Volume	0 (off) 1-10	5
	Microphone sensitivity	0 (off) 1-10	5
	Language		Language of the country
	Contrast	1-40	20
	Configuration	code-protected service menu for trained dealers	-
	Time/date	indiv. setting	-

Menu structure Control and display unit with 10.4" colour screen incl. touch function

1st level	2nd level	Adjustable values, functions	Factory settings
Neuro	Training time	1-180 min.	15 min.
	Direction of rotation automatic	on/off	off
	Biofeedback	Symmetry bar Symmetry road passive off	Symmetry bar (smiley for upper body training)
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Spasm detection	fine medium rough	medium
	Spasm program	forward backward alternating follow	forward
	Autom. speed adaptation	on/off	off
	Heart rate limit	60-150/min	100/min
Ortho	Training time	1-180 min.	15 min.
	Biofeedback (inactive for upper body training)	Symmetry bar Symmetry road passive off	Symmetry bar
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Muscle support	on/off	on
	Heart rate limit	60-150/min	100/min
Cardio	Training time	1-180 min.	15 min.
	Biofeedback (inactive for upper body training)	Symmetry bar Symmetry road passive off	Symmetry bar
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Heart rate limit	60-150/min	100/min

1st level	2nd level	Adjustable values, functions	Factory settings
Isokinetic	Training time	1-180 min.	15 min.
	Biofeedback	Symmetry bar Symmetry road passive off	Symmetry bar (smiley for upper body training)
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Spasm detection	fine medium rough	medium
	Spasm program	forward backward alternating follow	forward
	Heart rate limit	60-150/min	100/min
Keeper	Training time	1-180 min.	15 min.
	Level of difficulty	easy medium difficult	easy
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Spasm detection	fine medium rough	medium
	Heart rate limit	60-150/min	100/min
Hedgehog (exclusively for leg exercise)	Training time	1-180 min.	15 min.
	Level of difficulty	easy medium difficult	easy
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Spasm detection	fine medium rough	medium
	Max. symmetry	70% 80% 90% 100%	80%
	Heart rate limit	60-150/min	100/min

1st level	2nd level	Adjustable values, functions	Factory settings
Car (exclusively for leg exercise)	Training time	1-180 min.	15 min.
	Level of difficulty	easy medium difficult	easy
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Spasm detection	fine medium rough	medium
	Lane preselection	left random right frontal	random
	Heart rate limit	60-150/min	100/min
Planet	Training time	1-180 min.	15 min.
	Level of difficulty	easy medium difficult	easy
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Spasm detection	fine medium rough	medium
	Heart rate limit	60-150/min	100/min
Group therapy (available as additional option)	Training time	1-180 min.	15 min.
	Motor power	2-22 Nm (2-8 Nm for upper body exerciser)	10 Nm
	Spasm detection	low medium high	medium
	Heart rate limit	60-150/min	100/min
Basic settings	Volume	0 (off) 1-10	5
	Microphone sensitivity	0 (off) 1-10	5
	Language		Language of the country
	Contrast	1-40	20
	Configuration	code-protected service menu for trained dealers	-
	Time/date	indiv. setting	-

Basic settings in menu section Basic settings:

- ❑ Volume
- ❑ Microphone sensitivity
- ❑ Language
- ❑ Contrast
- ❑ Configuration (trained dealer)
- ❑ Time/date

It is possible to set the necessary configuration under menu item Configuration.

- ❑ The configuration requires an access code and is exclusively to be used by trained dealers.

Training time

Value range: between 1 and 180 minutes

Factory setting: 15 min

Automatic direction of rotation

If automatic direction of rotation is activated

- ❑ the direction of rotation will change every four minutes during passive training.
- ❑ During active training exercise, the direction of rotation will not change.

Biofeedback

- ❑ Only the training programs Neuro, Ortho, Cardio and Isokinetic permit changing the biofeedback.
- ❑ Shows biofeedback Symmetry bar or Symmetry road as factory setting.

Setting options in sub menu:

- Symmetry road
- Symmetry bar
- passive
- off

Motor power

▶ It is possible to limit the maximum motor power in the sub menu.

The motor power allows individual settings for every training program.

Warning

Risk of injury due to inappropriate motor power!

▶ Before every training session and every time when changing the training program, check motor power setting.

Spasm detection

Enables setting the barrier at which the sensor system recognises an impermissible user's movement and in order to minimise the risk of overstrain, stops the motor.

- ❑ The larger the crank radius, e.g. the lower the motor power, the more sensitive the reactions of the anti-spasm-control system.

Setting options:

- ❑ **low**
  - Users with very sensitive joints and tendons.
  - Motor will stop even at slight resistance.
- ❑ **medium**
  - Users with less sensitive joints.
- ❑ **high**
  - Users with severe spasms. Motor will stop only at strong resistance.

Spasm program

Enables setting the direction of rotation in which the exercise will resume after a spasm has been recognised.

Setting options:

- **forward**
  - always start in forward direction after a spasm was recognised (recommended if user tends to have stretch spasms)
- **backward**
  - always start in backward direction after a spasm was recognised (recommended if user tends to have flexion spasms)
- **alternating**
  - change direction of rotation after a spasm was recognised
- **follow**
  - start in direction used previous to spasm being recognised

Automatic speed adjustment

When the automatic speed adjustment is set to **ON**, the passive lead speed (motor) will automatically adapt itself during active exercise to a higher performance made be the user.

Upper limit: 35 rpm

Example

If the user is working at 30 rpm instead of the set number of revolutions (lead speed) of 15 rpm, the THERA-Trainer tigo will adjust the lead speed to 25 rpm after approx. 10 seconds. If the user becomes passive again, THERA-Trainer tigo continues at 25 rpm. The users acquires his individual speed and if he becomes passive, the exercise will continue at the number of revolutions comfortable to him.

Heart rate limit

THERA-Trainer tigo reduces exercising resistance as soon as the set pulse rate is reached. This makes sure that during training sessions, the user's pulse rate always stays below the limit set by the doctor.

The heart rate limit allows individual settings for every training program.

Warning

Risk of injury due to inappropriate heart rate limit!

▶ Before every training session and every time when changing the training program, check setting for heart rate limit using a cardio-pulse-set.

▶ Use heart rate limit exclusively in combination with control and display unit and cardio-pulse-set.

▶ Set a larger crank radius for training programs that require a higher active performance (Ortho, Cardio).

Muscle support

This function supports users with very low or one-sided residual power. This function supports the available residual power in such a way that smooth rotation is guaranteed at all times.

Active muscle support

- boosts the user's activity

▶ takes over the work of the inactive side and acts as an electronic flywheel for users with amputated legs.

Level of difficulty

Set level of difficulty for training programs Keeper, Hedgehog, Car and Planet in sub menu (exclusively for control and display unit with 10.4" colour screen).

3 steps:

- ❑ easy
- ❑ medium
- ❑ difficult

Volume

▶ To set volume in sub menu Basic settings:
  – Loudspeakers of control and display unit
  – Volume of control buttons
  – Acoustic feedback of training programs

Value range: 0 (off) to 10

- ❑ A too high volume might activate the voice-controlled emergency stop.
- ❑ A symbol in the status bar indicates the status.

Microphone sensitivity

- ❑ Permits voice-controlled emergency stop (see Safety devices).

▶ To set microphone volume of control and display unit in menu Basic settings/Microphone sensitivity:

- ❑ A symbol in the status bar indicates the status.
- ❑ **0** (off)
  – when too loud ambient noise causes the THERA-Trainer tigo to switch off inadvertently
- ❑ **1 - 3**
  – for very loud ambient noise
- ❑ **4 - 6**
  – for normal ambient noise
- ❑ **7 - 10**
  – for very little ambient noise

▶ Perform a practical test to check whether setting is correct.

▶ Press START button to continue the training session.

Language

▶ 26 languages are available.

Factory setting: language of the country of delivery

Contrast

▶ Adjust contrast of colour screen in menu Basic settings/Contrast.

Time/date

▶ Set date and time in sub menu:

- ❑ when switching between summer and winter daylight saving time.
- ❑ after THERA-Trainer tigo has been without power supply for a longer period of time.
- ❑ for training documentation and report with software package Cycling documentation and report.
- ❑ for printer for training documentation.

Basic settings Training

▶ See table Menu structure.

- ❑ Settings will remain unchanged if the power supply is cut off. The training session will start with the same settings.

Factory settings

Reset to factory settings:

▶ Press and hold STOP button.

▶ Press button Direction of rotation at the same time.

Factory settings are restored.
The settings in the section Basic settings remain unchanged.

14.3 Training programs/Training

To start training program:

▶ Press START button.

To stop training program:

▶ Press STOP button.

To end training program:

▶ Press STOP button twice.

Leg exercise:

▶ Set height of safety handle or upper body exerciser so that thighs/knees do not collide with it.
▶ Lock cranks of upper body exerciser in horizontal position.
▶ Do not use safety handle as standing aid.
▶ Make sure that height adjustment system is securely tightened.
▶ Exercise exclusively with two foot rests.
▶ Make sure that feet are secured.

Arm exercise:

▶ Exercise exclusively with two therapy grips or two arm rests.
▶ Do not put feet into foot rests during upper body training.
▶ Make sure that arm rests are safely attached to therapy grips or cranks when exercising the upper body.
▶ Make sure it is not possible for arms to inadvertently loosen out of arm rests.

Neuro (basic setting)

Training program for users with neurological disorders such as hemiplegia, paraplegia, multiple sclerosis, Parkinson's disease.

❑ Training type: pre-set resistance.
❑ Exercising resistance setting will remain constant within the entire rpm range.
❑ Higher pedalling frequency = higher performance

Ortho

Training program for users with orthopaedic problems, e.g. after knee or hip surgery.

❑ Required performance level is pre-set.
❑ The training program Ortho prescribes the performance level for the exercise in Watts.
❑ THERA-Trainer tigo regulates the exercising resistance automatically depending on the number of revolutions, so that the required performance always remains at the selected level.

Cardio

Training program for patients with cardiovascular diseases whose pulse rate must not exceed a certain level.

- ❑ An upper limit for the pulse rate is specified.
- ❑ THERA-Trainer tigo reduces the resistance as soon as the pulse rate reaches the limit.
- ▶ Use this training program exclusively in combination with control and display unit and cardio-pulse-set.

Isokinetic

Training program for users with coordination problems.

- ❑ Number of revolutions is pre-set.
- ❑ THERA-Trainer tigo keeps number of revolutions constant during the entire training session (independent of the generated pedalling power).
- ❑ By active pedalling, the user generates a certain pedalling power without increasing the number of revolutions.

Note

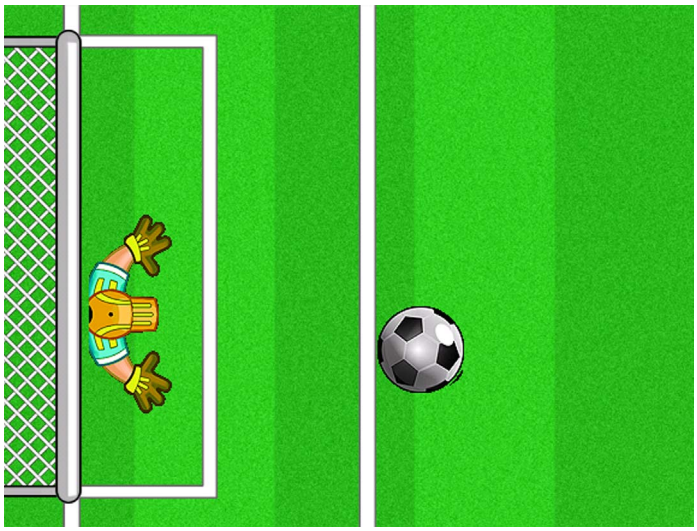
Using the following training programs is exclusively possible with the control and display unit with 10.4" colour screen.

The following training programs include acoustic feedback. Set microphone sensitivity to the lowest level (1).

Keeper

Training program for active exercise:

- ❑ The training program is suitable for both the leg and the upper body exerciser.



To intercept as many shots as possible:

- ▶ Move keeper up by active pedalling (increasing the number of revolutions).
- ▶ Move keeper down by slower pedalling (reducing the number of revolutions).
- ▶ If it is not possible to move the keeper all the way up, reduce number of revolutions (possibly resistance).

If it is not possible to exceed the pre-set speed (passive number of rotations) and the pre-set resistance, the keeper stays at the bottom.

Levels of difficulty:

- ❑ easy
- ❑ medium
- ❑ difficult

The higher the level of difficulty, the smaller and faster are the balls.

Hedgehog

Training program for power distribution of the lower extremities.

❑ The training program is exclusively suitable for the leg exerciser.

To catch as many balloons and other falling objects as possible and make them burst:

▶ Move the hedgehog to the left or to the right by one-sided activity (more activity on the left or right side as required).

Levels of difficulty:

❑ easy
❑ medium
❑ difficult

The higher the level of difficulty, the faster the objects fall.

Maximum symmetry

With software version 3.1 or higher, it is possible to set the maximum symmetry in the sub menu.

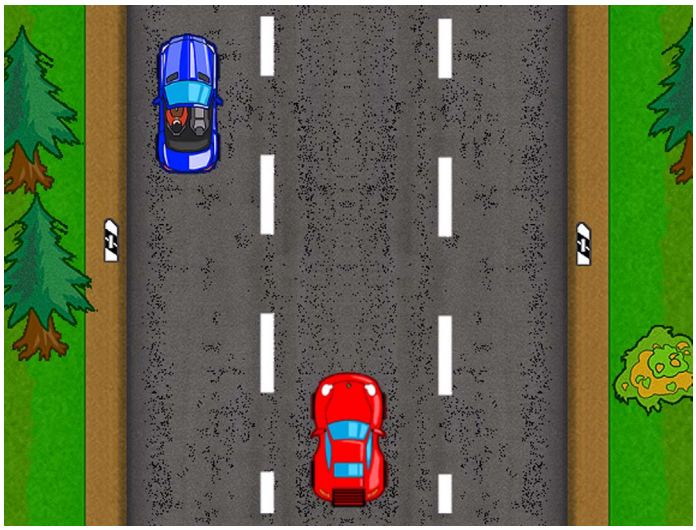
This setting permits users who do not reach 100% symmetry on their left or right side to use the training program "Hedgehog".

Options:

❑ 70%
The hedgehog is on the far left or right at 70% symmetry
❑ 80%
The hedgehog is on the far left or right at 80% symmetry
❑ 90%
The hedgehog is on the far left or right at 90% symmetry
❑ 100%
The hedgehog is on the far left or right at 100% symmetry

Training program for active exercise. **Car**

❑ The training program is exclusively suitable for the leg exerciser.



To overtake vehicles in front of the car:

▶ Pedal faster than the pre-set speed (passive number of rotations).
▶ The more the pre-set speed is exceeded, the faster the vehicles are overtaken.
▶ By one-sided activity
  – more activity on left side - pass on left side,
  – more activity on right side - pass on right side

Levels of difficulty:

❑ easy
❑ medium
❑ difficult

Increasing the level of difficulty also increases the number of vehicles available to overtake.

Lane preselection

With software version 3.1 or higher, the sub menu permits setting the lanes in which the vehicles are to appear.

This setting option allows focussing on one side of the body and permits demanding constant load changes between the right and left side.

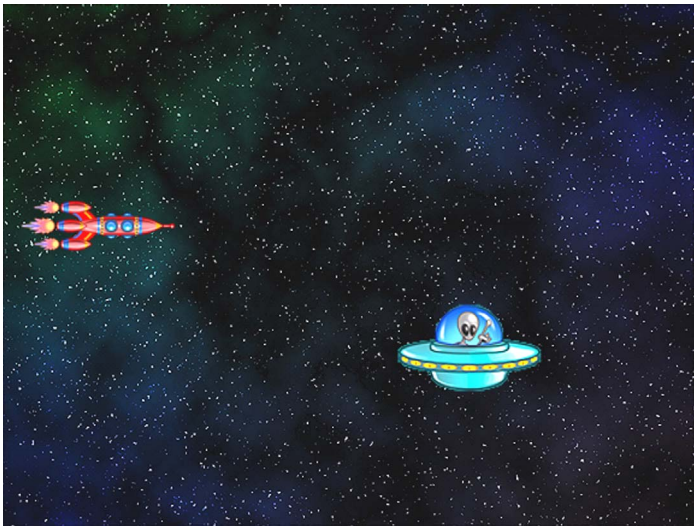
Options:

❑ left:
Vehicles appear in left and centre lane
❑ right:
Vehicles appear in right and centre lane
❑ random:
Vehicles appear in all lanes
❑ frontal:
Vehicles appear in the same lane as the car

Planet

Training program for concentric and excentric exercise.

❑ The training program is suitable for both the leg and the upper body exerciser.



▶ Make sure that spasm detection is deactivated.

Concentric exercise (positive dynamic, overcoming):

▶ Move spaceship up to avoid other spaceships and planets.

▶ Reach pre-set pedalling power to move spaceship up.

The higher the user's pedalling power, the higher the spaceship moves.

If it is not possible for the user to reach the pedalling power required to move the spaceship up:

▶ Reduce set pedalling power.

Excentric exercise (negative dynamic, yielding):

▶ Move spaceship down to avoid other spaceships and planets.

▶ Work against pre-set drive power to move spaceship down.

The more the user works against the drive power, the further the spaceship moves down.

Setting options:

❑ Leg exerciser between 0.5 and 10.0 Nm

❑ Upper body exerciser between 0.5 and 8.0 Nm

▶ Use Plus/Minus button on top left corner of screen to change settings.

Note

If the motor power setting is below the maximum values of the setting options, the motor power setting constitutes the maximum value.
If the motor power setting is above the maximum values, the maximum value (10.0 Nm or 8.0 Nm) applies.

Example

The setting is 2.0 Nm. The spaceship is located in the centre at 0.0 Nm (passive exercise).

To move the spaceship up (concentric exercise), the user must reach a certain pedalling power. To move the spaceship all the way to the top, a pedalling power of 2.0 Nm is required.

To move the spaceship down (excentric exercise), the user must work against a certain drive power. To move the spaceship all the way to the bottom, the user must work against a drive power of 2.0 Nm.

Note

Since the spasm detection is deactivated, the THERA-Trainer tigo will react very late if a crank locks.

Levels of difficulty:

- ❑ easy
- ❑ medium
- ❑ difficult

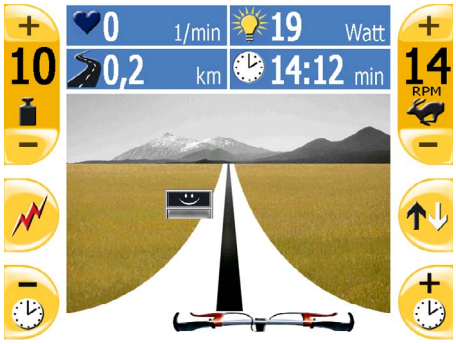
The higher the level of difficulty, the faster and more frequently the user must avoid spaceships and planets.

14.4 Biofeedback

- ❑ Gives the user feedback on his course of movement during the training session.
- ❑ Shows the power difference between right and left leg in forward or backward direction.
- ❑ Shows how evenly the power is distributed between the arms moving the crank, i.e. whether they are pushing and pulling to the same degree.
- ❑ Exclusively for active exercise.
- ❑ The leg exercise results will be falsified if:
  - the cranks are set to different radii.
  - then user is not seated in the centre.
  - the leg pushes and pulls.

Note

It is possible to have the colours of the biofeedback illustration adjusted in the sub menu by a trained dealer to accommodate users with red-green blindness (Basic settings/Configuration).



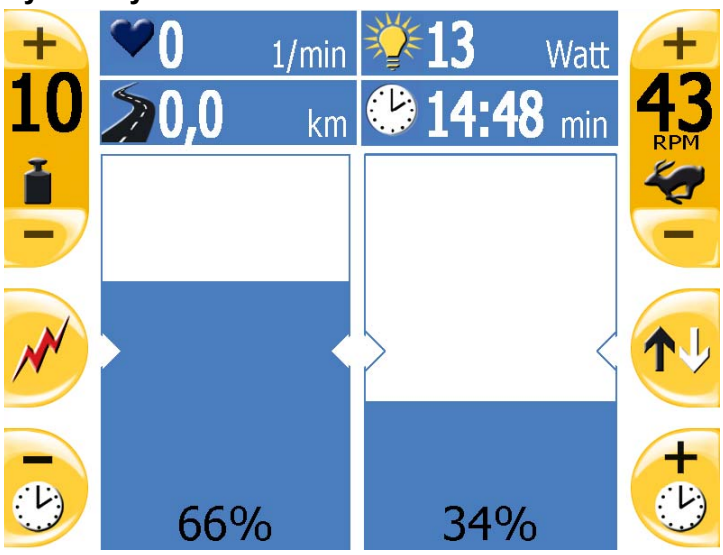
Biofeedback for leg exerciser

▶ Select illustration in sub menu:
  - Symmetry bar
  - Symmetry road
  - Passive/muscle tone

▶ To switch between Symmetry bar and Symmetry road during the training session, press START button.

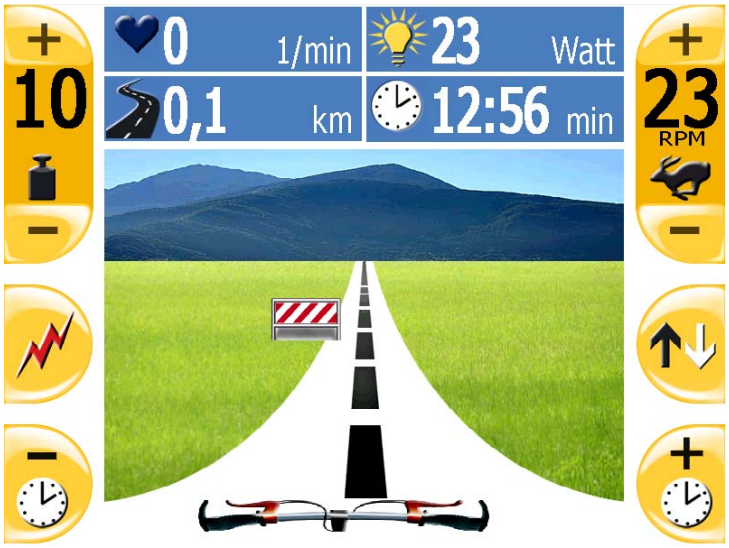
▶ Deactivate biofeedback via sub menu in respective training program.

Symmetry bar



Bar diagram shows activity distribution between lower extremities.
The total of both bars is always 100%.

Symmetry road



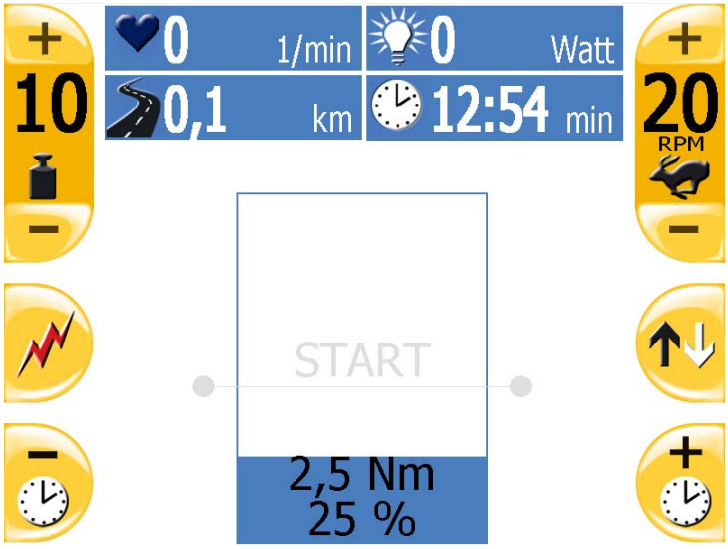
Depending on the power distribution, a bike on the street illustration will move to the left or to the right.

To avoid obstacles appearing at irregular intervals:

- ❑ Obstacle on the left, more activity on the right side
- ❑ Obstacle on the right, more activity on the left side

When the obstacle has been successfully avoided, it lights up in green.

Biofeedback Passive/Muscle tone



Screen

- ❑ shows movement of arms or legs with current motor power (bar) during passive training.
- ❑ gives information on muscle tone.

Maximum height of bar corresponds to 100% of the power set as motor power.

- ❑ Value „START“ indicates the average power provided by the motor during the first minute of exercise.
- ❑ The solid part of the bar and the percentage % at the bottom of the bar indicate how many % of the set motor power is required to move the arms or legs.
- ❑ The value indicated in Nm shows the motor power the THERA-Trainer tigo has to provide.
- ❑ For leg exercise, a motor power of 22 Nm can be reached.
- ❑ For arm exercise, a motor power of 8 Nm can be reached.
- ❑ Excentric exercise of legs or arms is possible when
  - anti-spasm-control is deactivated.
  - user works against drive power as much as possible.

Note

Changing the crank radius will influence this biofeedback illustration considerably. The % values of two training sessions are comparable exclusively if crank radius and maximum motor power settings (sub menu) are the same.

This biofeedback illustration does not give any scientifically relevant information, it merely shows the user whether his muscles are relaxed or tense and for example of any tone changes during a training session.

Biofeedback for arm exercise

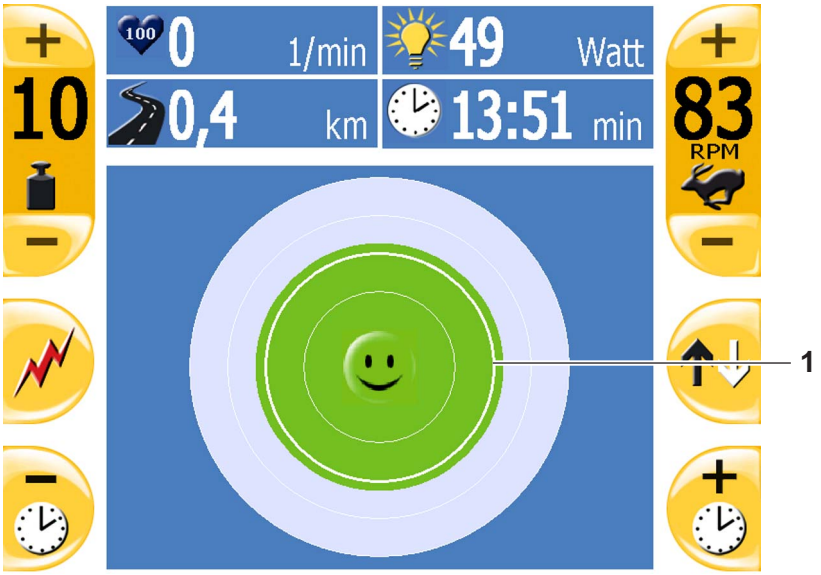
Note

Biofeedback illustration Smiley is exclusively for training programs Neuro and Isokinetic. The biofeedback is inactive for the training programs Ortho and Cardio. An additional biofeedback Passive is available for arm exercise.

Biofeedback illustration:

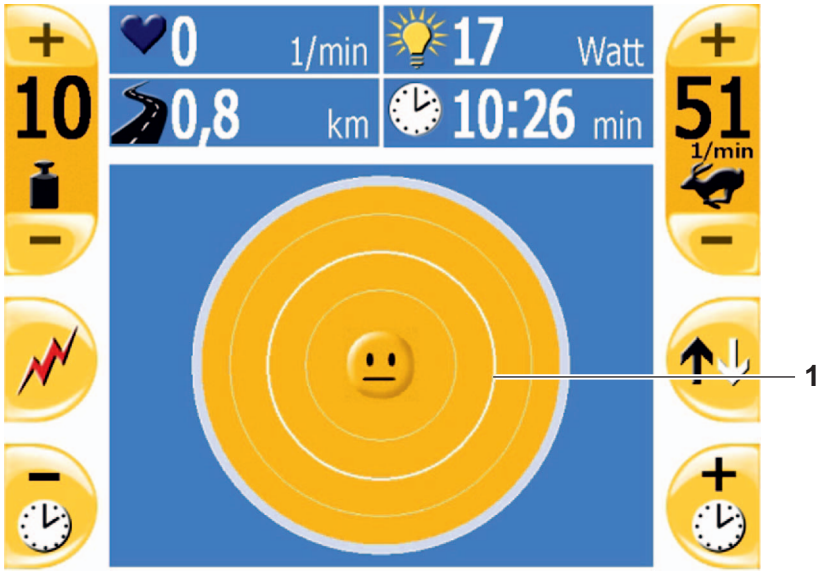
- ❑ The colour of the smiley faces shows the level of coordination of the arm movement when moving the cranks during active training.
- ❑ The solid area indicates the user's level of activity.
- ❑ The goal is to keep the green area at the size of the bold white line **1** as constant as possible.

▶ Deactivate biofeedback via sub menu in respective training program.



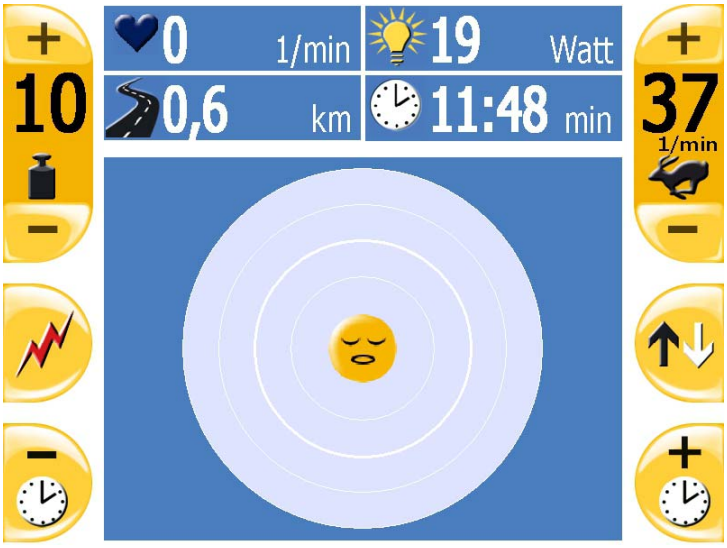
Green smiley:

- ❑ Arms are working together harmonically.



Orange smiley:

- ❑ Arms not working together harmonically, or moving jerkily.



Sleeping smiley:

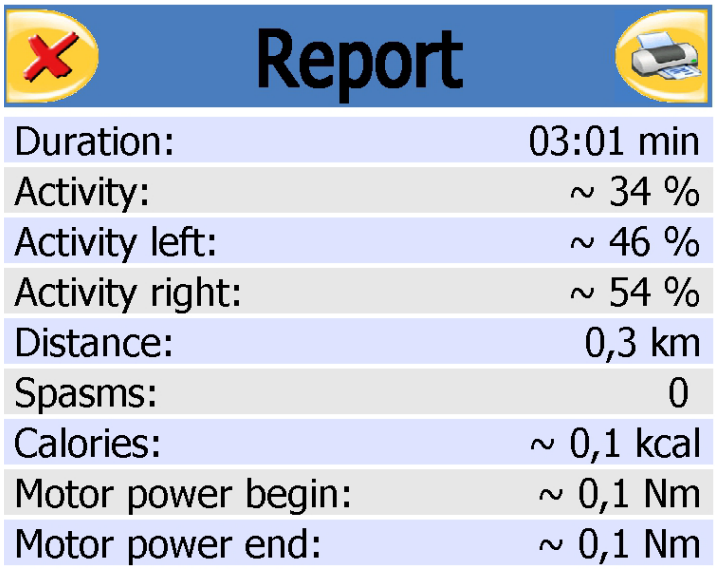
❑ Too low or no arm activity.

14.5 Training report

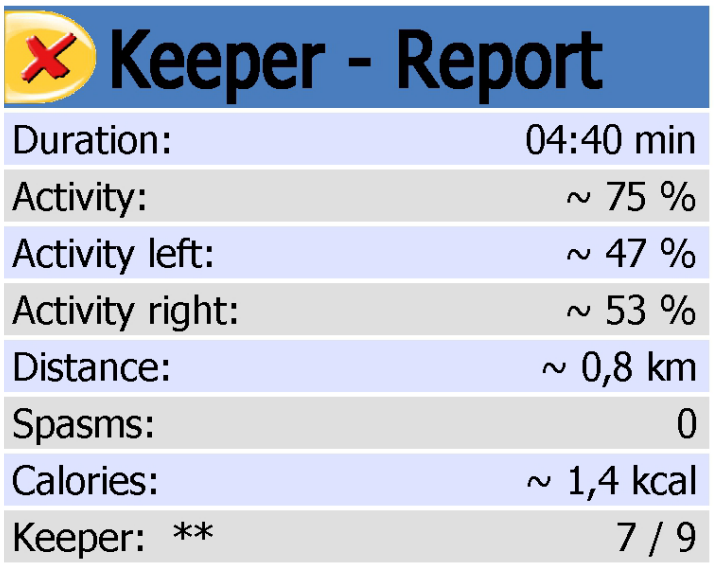
After the training session, the THERA-Trainer tigo will show a training report.

Requirements:

- ❑ The training session lasted for at least one minute.
- ❑ The training session was started by pressing the START button.



Note *Training report of training programs Neuro, Ortho, Cardio, Isokinetic and Group therapy.*



Note *Training report of training programs Keeper, Hedgehog, Car and Planet.*

The following results are shown:

Training time
- ❑ Total training time without breaks (in minutes)

Active percentage (with muscle power)
- ❑ Percentage of the training time, during which the user used his own muscular power (in %).

Activity left side
- ❑ Percentage of activity for the left leg (in %) (only for leg exercise).

❑ Percentage of activity for the right leg (in %). (only for leg exercise) **Activity right side**

❑ Entire covered distance (in km). **Distance**

❑ Number of spasms recognised during the training session. **Number of spasms**

❑ Calories (in kcal). **Calories**
❑ The indicated number of calories corresponds to the energy absorbed by the THERA-Trainer tigo.
▶ Calculate the calories actually consumed by the user, multiply this number by five.

❑ Stiffness (muscle tone) at the beginning of the training session (during the first 60 s) **Motor power beginning**

❑ Stiffness (muscle tone) at the end of the training session (during the last 60 s) **Motor power end**

❑ Indicates the level of difficulty of the absolved training program in stars (* = easy,** = medium,*** = difficult). **Level of difficulty**
❑ Is indicated exclusively in training programs "Keeper", "Hedgehog", "Car" and "Planet".

❑ Indicates the success rate. **Success rate**
– e.g. for training program Keeper: 7/8 means that seven out of eight balls were caught.
❑ Is indicated exclusively in training programs "Keeper", "Hedgehog", "Car" and "Planet".

Print training results as follows: **Print**

▶ Print via printer symbol (see Printer for training documentation).

To leave the training report: **Leaving the report**

▶ Press **START button**, **STOP button** or .

Calling up the training results

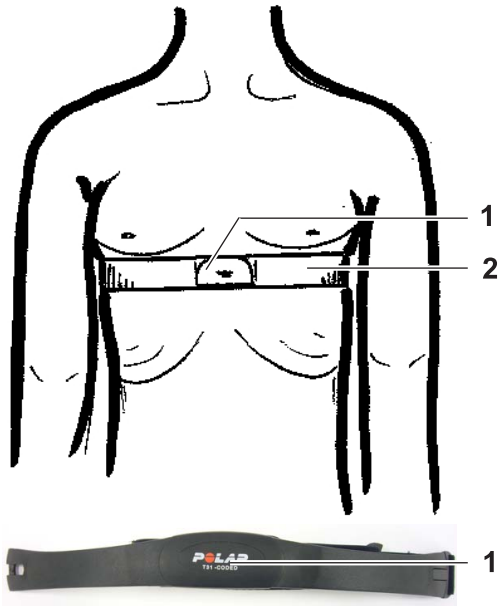
❑ Pressing the STOP button makes the display switch between training report and standard display.
❑ Pressing the STOP button will display the training data until
– a new training session is started from the standard display by pressing the START button.
– THERA-Trainer tigo is restarted (also from stand-by mode).

14.6 Cardio-pulse-set

Caution

Material damage due to incorrect use!

- ▶ Do not fold cardio-pulse-set.
- ▶ Do not leave cardio-pulse-set in direct sunlight for long periods of time.



Note

Observe minimum distance of 1.5 m between THERA-Trainer tigo so that THERA-Trainer tigo with cardio-pulse-set do not influence each other.

The polar pulse belt (cardio-pulse-set) prevents exceeding the set heart rate limit (see Heart rate limit) and indicates the user's current pulse rate.

- ▶ Use cardio-pulse-set exclusively with control and display unit with 5.7" or 10.4" colour screen.
- ▶ The pulse signal is transmitted wireless to the THERA-Trainer tigo. In the THERA-Trainer tigo with cardio-pulse-set, the receiver is built in.

Apply polar pulse belt as follows:

- ▶ Attach transmitter **1** to elastic belt **2** with clip buckle.
- ▶ Moisten transmitter slightly for better conductivity.
- ▶ Apply transmitter centrally below the chest (solar plexus close to the heart).
- ▶ Put belt around upper body and close with clip buckle.
- ▶ Make sure that transmitter is touching the skin.
- ▶ Make sure that polar logo is on the outside.
- ▶ Make sure that cardio-pulse-set does not slip.
- ▶ Make sure that cardio-pulse-set is not too tight.

If pulse monitor is working correctly, control and display unit shows

- ❑ pulse rate.
- ❑ solid red heart symbol.

Clean cardio-pulse-set as follows:

Caution

Material damage due to incorrect cleaning or drying!

- ▶ Never use cleaning agents that are chemical, aggressive or caustic, or contain solvents.
- ▶ Do not use moisturising soap.
- ▶ Do not tumble dry or iron.

- ▶ Rinse under flowing water with mild soap rinse after use.
- ▶ Hang to dry.

14.7 Printer for training documentation

Connect printer as follows:

- ▶ Use exclusively with control and display unit with 5.7" or 10.4" colour screen.
- ▶ Loosen 2 screws of cover of USB interface.
- ▶ Connect Bluetooth transmitter **1** to USB-interface of control and display unit (see above).
- ▶ Put cover on USB-interface and secure with 2 screws.
- ▶ Make sure that there is a distance of at least 2 metres between user and printer.

Bluetooth symbol appears in status bar of control and display unit.

- ▶ Exercise (at least one minute).
- ▶ Make sure that the printer is out of the user's reach while exercising.
- ▶ Read training report from control and display unit after the training session (see Training report).

Print training report as follows:

When Bluetooth transmitter is plugged in and active, a printer symbol appears in the top right corner of the control and display unit.

- ▶ Activate print dialog with printer symbol .
- ▶ Print training report.
- ▶ Observe the enclosed user manual.

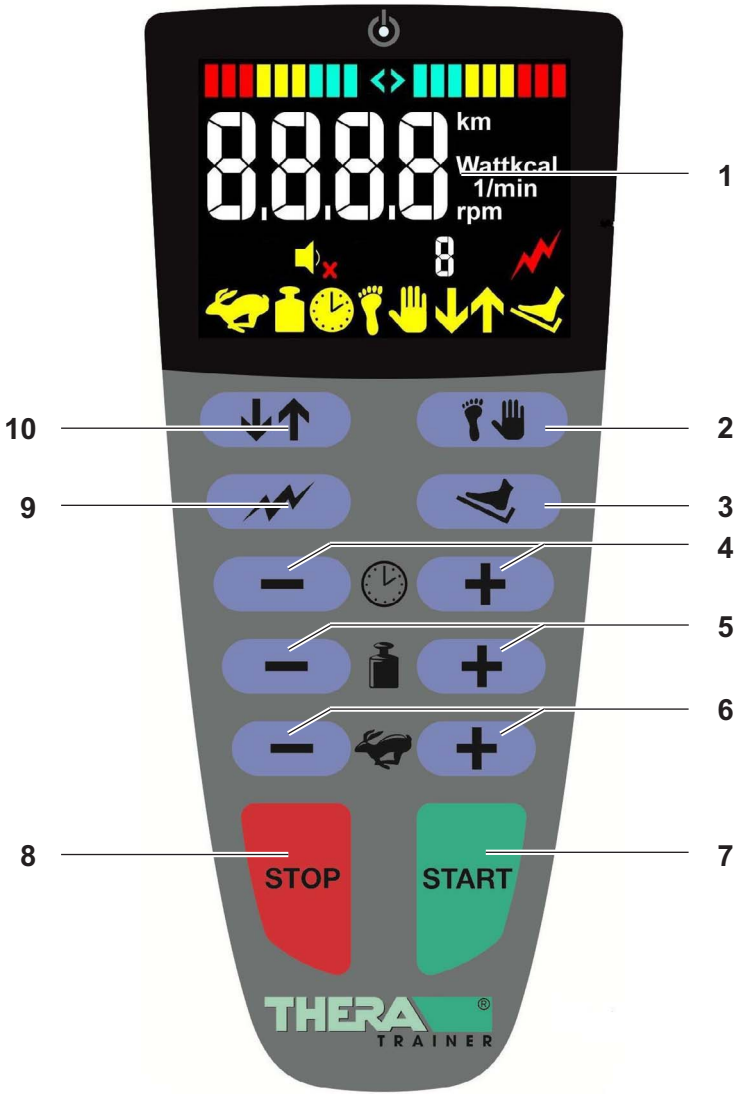
Bluetooth connection:

- ❑ Range approx. 10 m

Note

It is possible to use a single printer for more than one THERA-Trainer tigo at the same time. For this purpose, use one Bluetooth transmitter per THERA-Trainer tigo.

14.8 Control and display unit with 2.7" colour screen



(1) Display Training parameters
(2) Switch button Leg/upper body exerciser
(3) Button Easy entry
(4) Buttons Training time
(5) Buttons Exercising resistance
(6) Buttons Number of revolutions
(7) START button
(8) STOP button
(9) Button Anti-spasm-control
(10) Button Direction of rotation

Functions of control and display unit

START button

- ▶ Press button: THERA-Trainer tigo starts training session with basic settings.
  - – THERA-Trainer tigo starts at 10 rpm.
- ▶ Press button after interruption (break): Training session is resumed.
- ▶ Press button during training session: Display change.

STOP button

- ▶ Press button: THERA-Trainer tigo stops current training session.
- ▶ Press button again: THERA-Trainer tigo indicates covered distance in km.
- ▶ Press button once again: THERA-Trainer tigo indicates energy consumption in kcal.
- ❑ Display of training data is possible until
  - – START button is pressed again.
  - – energy supply is interrupted.
  - – THERA-Trainer tigo goes into stand-by mode.

Display Training parameters

- ❑ Indicates training parameters alternatingly during the training session.

Button Easy entry

- ▶ Press button: Crank moves into first entry position.
  - – First foot rest is down.
- ▶ Put first foot into foot rest.
- ▶ Press button again: Crank moves into second entry position.
  - – Second foot rest is down.
- ▶ Put second foot into foot rest.
- ▶ Secure first foot with velcro or foot fixing/leg support.
- ▶ Press button again: Crank moves into first entry position.
- ▶ Secure second foot with velcro or foot fixing/leg support.
- ▶ Press START button: Easy entry function is finished.

Button Direction of rotation

- ▶ Press button: Symbol Direction arrow flashes. THERA-Trainer tigo changes direction. THERA-Trainer tigo slows down to 0 rpm and resumes movement in opposite direction with pre-set number of rotations.
- ❑ Yellow arrow indicates direction of rotation.

Button Number of revolutions

- ▶ Press button +: Symbol Rabbit flashes. THERA-Trainer tigo increases number of revolutions step by step.
- ▶ Press button -: Symbol Rabbit flashes. THERA-Trainer tigo reduces number of revolutions step by step.
- ▶ Press and hold button: Increase or reduce number of revolutions continuously until maximum or minimum is reached.
- ❑ THERA-Trainer tigo starts at 10 rpm.
- ❑ Maximum number of passive revolutions: 60 rpm.
- ❑ Factory settings: 10 rpm

Switch button Leg/upper body exerciser

- ▶ Press STOP button: THERA-Trainer tigo stops current training session.
- ▶ Press switch button Hand/foot: THERA-Trainer tigo switches from leg to upper body exerciser or the other way round.
  - – Symbol Foot lights up: Leg exerciser active.
  - – Symbol Hand lights up: Upper body exerciser active.
- ❑ The switch button is inactive during training sessions or if no upper body exerciser is installed.
- ❑ Leg and arm exercise is not possible at the same time.

Button Anti-spasm-control

▶ Press button: THERA-Trainer tigo deactivates anti-spasm-control.
  – Symbol Lightning is inactive.
▶ Press button again: THERA-Trainer tigo activates anti-spasm control.
  – Symbol Lightning is active.
❑ Factory settings:
  – Spasm detection: step 2
  – Spasm program: forward

Button Exercising resistance

▶ Press button +: Symbol Weight flashes. THERA-Trainer tigo increases exercising resistance step by step.
▶ Press button -: Symbol Weight flashes. THERA-Trainer tigo reduces exercising resistance step by step.
▶ Press and hold button: Increase or reduce training resistance continuously until maximum or minimum is reached.
❑ Current exercising resistance is adjustable in 15 steps.
❑ Maximum exercising resistance:
  – leg exerciser: 22 Nm
  – upper body exerciser: 8 Nm
❑ Exercising resistance setting will remain constant within the entire rpm range.
❑ Higher pedalling frequency = higher performance
❑ Factory setting: 10 Nm

Button Training time

▶ Press button +: Symbol Clock flashes. THERA-Trainer tigo increases training time by minutes.
▶ Press button -: Symbol Clock flashes. THERA-Trainer tigo reduces training time by minutes.
▶ Press and hold button: Increase or reduce training time continuously until maximum or minimum is reached (max = 180 min).
❑ Factory setting: 15 min

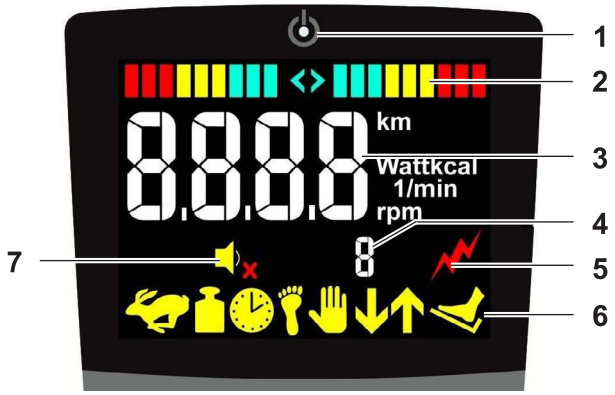
Saving training settings

It is possible to save individual training settings before starting:

❑ direction of rotation
❑ training time
❑ resistance
❑ leg/upper body exerciser

Every subsequent training session will start with these settings. An interruption of the energy supply will reset the settings to the factory settings.

14.9 Display units



(1) Display stand-by mode
(2) Symmetry display
(3) Display Training parameters
(4) Display Spasm detection
(5) Display Spasticity ON/OFF
(6) Display Status bar
(7) Display Key sound ON/OFF

Explanation of display units

Display stand-by mode

❑ If no button of THERA-Trainer tigo has been pressed for more than 10 minutes,
  – screen light of control and display unit switches off.
  – red LED **1** lights up.

▶ Press any button to switch THERA-Trainer tigo into operating mode.

After a self-test, THERA-Trainer tigo is ready for use.

Symmetry display

❑ Symmetry display:
  – divided into three colour areas (green, yellow, red)
  – one bar means 5% asymmetry
  – direction triangle indicates the side that must be more active.

❑ Symmetry display appears exclusively during leg exercise.

Display Training parameters

❑ Display Training parameter alternates during training session:
  – number of revolutions (1/min)
  – performance (Watt)
  – energy consumption (kcal)
  – distance (km)
  – remaining training time

▶ Press switch button Leg/upper body exerciser: Automatic change of training parameters deactivated.
  – Currently shown training parameter flashes.

▶ Press switch button Leg/upper body exerciser again: Automatic change of training parameters activated.

Display Spasm detection

❑ Shows currently set step of spasm detection

▶ Set spasm detection in sub menu.

Display Spasticity ON/OFF

❑ Spasm detection active: Red spasm symbol lights up.

❑ Spasm detection inactive: No symbol is displayed.

Note

Even when the spasm detection function is deactivated, it will detect extreme changes of movement (blocking of cranks, extreme power fluctuations). For safety reasons, a detected extreme change will be treated like a spasm.

Display Status bar

- ❑ Symbol Number of revolutions
- ❑ Symbol Resistance
- ❑ Symbol Training time
- ❑ Symbol Leg exerciser active
- ❑ Symbol Upper body exerciser active
- ❑ Symbol Leg and upper body exerciser active
- ❑ Symbol Direction of rotation
- ❑ Symbol Easy entry active

Display Key sound ON/OFF

- ❑ Key sound ON: Loudspeaker displayed.
- ❑ Key sound OFF: Crossed-out loudspeaker displayed.

14.10 Sub menu control and display unit with 2.7" colour screen

Permanent changes are possible for some settings:

- ❑ Motor power/resistance
- ❑ Leg/upper body exerciser
- ❑ Spasm program
- ❑ Setting key sound (on/off)
- ❑ Setting spasm detection

Values will remain unchanged if the power supply is cut off.

To change factory settings:

- ▶ Press buttons + + at the same time until screen shows sub menu.
- ▶ Set maximum motor power using button Exercising resistance.
- ▶ Set leg/upper body exerciser using switch button Leg/upper body exerciser.
  - – Symbol Foot: Leg exerciser is active
  - – Symbol Hand: Upper body exerciser is active
  - – Symbol Foot/Hand: Leg and upper body exerciser are active
- ▶ Set spasticity program using button Direction of rotation:

Note

Enables setting the direction of rotation in which the exercise will resume after a spasm has been recognised.

Setting options:

- ❑ forward (arrow up)
  - – always start in forward direction after a spasm was recognised (recommended if user tends to have stretch spasms)
- ❑ backward (arrow down)
  - – always start in backward direction after a spasm was recognised (recommended if user tends to have flexion spasms)
- ❑ alternating (both arrows)
  - – change direction of rotation after a spasm was recognised
- ❑ follow (no arrow)
  - – start in direction used previous to spasm being recognised

▶ Set spasm detection using button Anti-spasm-control:

Note *Enables setting the barrier at which the sensor system recognises an impermissible user's movement and in order to minimise the risk of overstrain, stops the motor.*

Setting options:

- ❑ low (1)
  - – Users with very sensitive joints and tendons. Motor will stop even at slight resistance.
- ❑ medium (2)
  - – Users with less sensitive joints.
- ❑ high (3)
  - – Users with severe spasms. Motor will stop only at strong resistance.

Note *The larger the crank radius, e.g. the lower the motor power, the more sensitive the reactions of the anti-spasm-control system, and the other way round.*

▶ Activate or deactivate key sound using button Easy entry.

▶ Press button STOP to confirm all changed settings.

14.11 Software package Cycling

Documentation and report

Note *Software Cycling documentation and report is exclusively possible with control and display unit with 5.7” or 10.4” colour screen.*

THERA-Trainer tigo supports as standard the software packages Cycling documentation and report to

- ❑ record training data.
- ❑ evaluate training data.
- ❑ document training data.

▶ Observe enclosed user manual of software package Cycling documentation and report.

Mini-PC for software package Cycling group therapy

Required for software package Cycling group therapy .

▶ The device establishes a Bluetooth connection to the THERA-Trainer tigo. The Bluetooth connection and the software package Cycling group therapy allow displaying the motion sequences of the THERA-Trainer tigo in different biofeedbacks.

Group therapy

The software Cycling group therapy allows up to four users to participate in one of the following biofeedback illustrations:

- ❑ Biofeedback Helicopter
- ❑ Biofeedback Hill Race
- ❑ Biofeedback Bike Tour

The software permits different training versions for the participating users at the same time:

- ❑ leg exercise and arm exercise
- ❑ exercise with THERA-Trainer tigo and THERA-Trainer veho

Note

Exclusively usable in combination with 10.4" colour screen and Mini-PC for software package Cycling group therapy.

Exclusively available for software version 3.1 or higher.

▶ Observe enclosed user manual of software package.

When THERA-Trainer tigo has been reset to factory settings:

▶ Reinstall training program Group therapy (see Service instruction).

15 MOTOR POWER/JOINT FORCE

15.1 Motor power

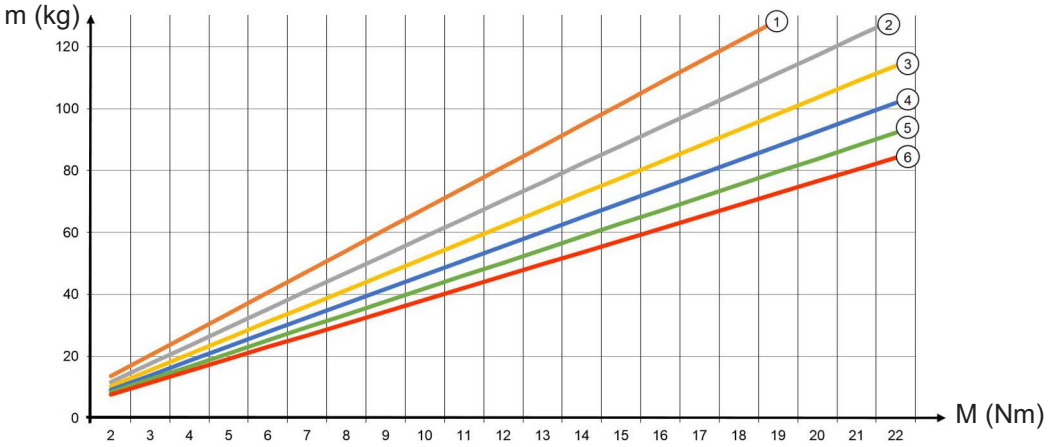
Warning

Risk of injury due to inappropriate motor power!

▶ Before every training session and every time when changing the training program, check motor power setting.

The motor power

- ❑ is adjustable individually for every training program and every user.
- ❑ has a stronger effect on the user's legs/arms with a small crank radius than with a large crank radius.
- ❑ limits the motor's maximum drive power.
- ❑ for the leg exerciser is adjustable between 2 and 22 Nm.
- ❑ for the upper body exerciser is adjustable between 2 and 8 Nm.



(1) Position 1 = radius adjustment 6.5 cm
(2) Position 2 = radius adjustment 7.5 cm
(3) Position 3 = radius adjustment 8.5 cm
(4) Position 4 = radius adjustment 9.5 cm
(5) Position 5 = radius adjustment 10.5 cm
(6) Position 6 = radius adjustment 11.5 cm

The diagram shows recommendations for the motor depending on body weight and radius setting. The motor power affects the exercising resistance and the spasm detection function.

m = mass (weight) of the user, M = torque (power) of the motor

- ❑ ①-⑥ = marks of stepless radius adjustment
- ❑ ① = very small radius, corresponds at 2-stepped radius setting roughly with mark 2
- ❑ ⑥ = very large radius, corresponds at 2-stepped radius setting roughly with mark 6

Setting motor power to fit the user's individual needs:

▶ Limit motor power in sub menu
(see Sub menu Control and display unit with 5.7" or 10.4" colour screen and see Sub menu control and display unit with 2.7" colour screen).

❑ high motor power:
– high exercising resistance
– late spasm detection

❑ low motor power
– low exercising resistance
– early spasm detection
– for sensitive joint systems

Upper body training

▶ For upper body training, observe marks ② and ⑥.

❑ ⑥ = long crank (110 mm)

❑ ② = short crank (75 mm)

Note *The diagram below shows which joint forces can act on the user after setting the motor power.*

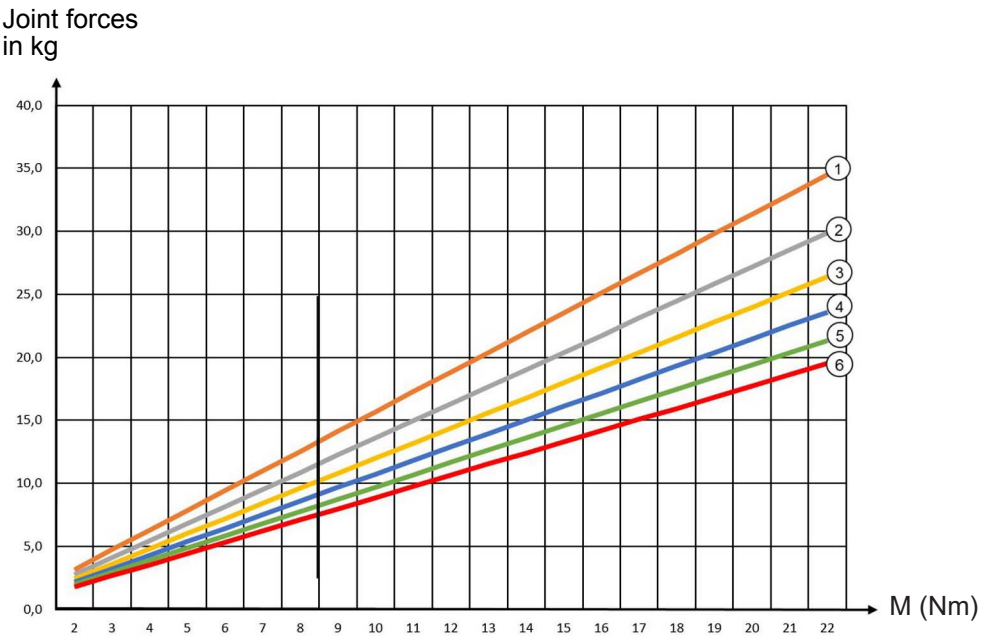
15.2 Joint force

The joint forces acting on the user

❑ must be observed for every training session.

❑ increase with reduced radius adjustments and higher motor power settings.

Note *The motor power for the upper body exerciser is adjustable between 2 and 8 Nm.*



(1) Position 1 = radius adjustment 6.5 cm
(2) Position 2 = radius adjustment 7.5 cm
(3) Position 3 = radius adjustment 8.5 cm
(4) Position 4 = radius adjustment 9.5 cm
(5) Position 5 = radius adjustment 10.5 cm
(6) Position 6 = radius adjustment 11.5 cm

The diagram shows the joint forces acting on the user in dependence on the motor power setting and radius adjustment.

M = torque (power) of the motor

- ①-⑥ = marks of stepless radius adjustment
- ① = very small radius, corresponds at 2-stepped radius setting roughly with mark 2
- ⑥ = very large radius, corresponds at 2-stepped radius setting roughly with mark 6

Upper body training

▶ For upper body training, observe marks ② and ⑥.

- ⑥ = long crank (110 mm)
- ② = short crank (75 mm)

Before every training session:

▶ Consult therapist or doctor regarding the joint forces admissible for/acting on the user.

▶ Set crank length and motor power accordingly.

16 CLEANING AND DISINFECTION

Danger

Danger to life due to electric shock!

- ▶ Prior to any cleaning or disinfection, switch off THERA-Trainer tigo.
- ▶ Prior to any cleaning or disinfection, unplug the power plug.
- ▶ Make sure that no cleaning agent or disinfectant gets into the THERA-Trainer tigo.
- ▶ If any cleaning agent or disinfectant gets into the THERA-Trainer tigo, contact a trained dealer immediately.

Warning

Risk of infection due to contaminated accessories/options!

- ▶ Wear gloves for cleaning and disinfection.

Caution

Material damage due to incorrect cleaning or disinfection!

- ▶ Never use cleaning agents that are aggressive, abrasive or caustic, or contain solvents.
- ▶ Use exclusively mild and environment-friendly cleaning agents and disinfectants.
- ▶ Use suitable cleaning agent (e. g. for TFT screens, etc.) for the screen.
- ▶ Use exclusively disinfectants that conform to country-specific regulations.
- ▶ Observe safety instructions by manufacturers of cleaning agents and disinfectants.

THERA-Trainer tigo Clean/disinfect as follows:

- ▶ Switch off THERA-Trainer tigo.
- ▶ Pull power plug.
- ▶ Check electronic components for damage.
  - – If any damage is found, do not clean but contact trained dealer.
- ▶ Make sure that the room is sufficiently aired during cleaning or disinfection.
- ▶ Clean surface of THERA-Trainer tigo with a soft and damp cloth.
- ▶ Clean surfaces of THERA-Trainer tigo and cardio-pulse-set by wet disinfection.
- ▶ Clean foils and stickers with care.
- ▶ Disinfect cushions and velcro straps in a watery disinfectant solution.
- ▶ Use exclusively disinfectants approved in accordance with country-specific directives to disinfect the THERA-Trainer tigo.
- ▶ Allow disinfectant solutions to dry thoroughly.
- ▶ Plug in power plug.
- ▶ Switch on THERA-Trainer tigo.

Clean/disinfect wristbands for therapy grips/safety handle as follows:

- ▶ Wash Neoprene parts of wristbands for therapy grips/safety handle in a washing machine at 30 °C with a mild detergent, but without softener.
- ▶ Do not tumble dry Neoprene parts.
- ▶ It is possible to remove stains using ethanol.

17 MAINTENANCE AND REPAIR

Danger

Danger to life due to electric shock!

- ▶ Prior to any maintenance or repair work, switch off THERA-Trainer tigo.
- ▶ Prior to any maintenance or repair work, unplug the power plug.

17.1 Maintenance

The THERA-Trainer tigo is maintenance-free.

The manufacturer recommends performing a safety check after 24 months. **Note**

17.2 Further use

The THERA-Trainer tigo is suitable for further use by a different customer.

Before every further use THERA-Trainer tigo

- ▶ Clean and disinfect THERA-Trainer tigo thoroughly (see Cleaning and disinfection).
- ▶ Perform a visual check or a function check.
- ▶ Ask the manufacturer for the service instructions for safety control.
- ▶ Check if all accessories and options are complete (see delivery note).
- ▶ Replace cushions and velcro straps.

18 TROUBLESHOOTING

18.1 Control and display unit with 2.7" colour screen

Error code	Troubleshooting
E007	❑ Contact a trained dealer. ❑ Have main controller board replaced.
E009	Cabling faulty or defective. ❑ Contact a trained dealer.
E010	Software versions incompatible. ❑ Contact a trained dealer. ❑ Have main controller board and control and display unit with 2.7” colour screen replaced.
E011	Software versions incompatible. ❑ Contact a trained dealer. ❑ Have main controller board and control and display unit with 2.7” colour screen replaced.
E012	Software versions incompatible. ❑ Contact a trained dealer. ❑ Have main controller board and control and display unit with 2.7” colour screen replaced.
E016	Cabling faulty or defective. ❑ Contact a trained dealer.
E018	Cabling faulty or defective. ❑ Contact a trained dealer.
E019	Cabling faulty or defective. ❑ Contact a trained dealer.
E020	Cabling faulty or defective. ❑ Contact a trained dealer.
E024	Cabling faulty or defective. ❑ Contact a trained dealer.
E026	Cabling faulty or defective. ❑ Contact a trained dealer.
E034	Cabling faulty or defective. ❑ Contact a trained dealer.
E038	Software versions incompatible. ❑ Contact a trained dealer. ❑ Have main controller board and control and display unit with 2.7” colour screen replaced.
E039	❑ Pull power plug and plug it back in after approx. 5 s. THERA-Trainer tigo restarts. If error message occurs repeatedly: ❑ Contact a trained dealer.
E040	❑ Pull power plug and plug it back in after approx. 5 s. THERA-Trainer tigo restarts. If error message occurs repeatedly: ❑ Contact a trained dealer.

Error code	Troubleshooting
E041	❑ Pull power plug and plug it back in after approx. 5 s. THERA-Trainer tigo restarts. If error message occurs repeatedly: ❑ Contact a trained dealer.
E044	Cabling faulty or defective. ❑ Contact a trained dealer.
E128	THERA-Trainer tigo is overheated. ❑ Switch off THERA-Trainer tigo and pull power plug. ❑ Let THERA-Trainer tigo cool down for 10 min. If error message occurs repeatedly: ❑ Contact a trained dealer.

18.2 Control and display unit with 5.7"-/10.4" colour screen

Error code	Troubleshooting
Error 16	❑ Pull power plug and plug it back in after approx. 5 s. THERA-Trainer tigo restarts. If error message occurs repeatedly: ❑ Contact a trained dealer.
Error 17	THERA-Trainer tigo is overheated. ❑ Switch off TTHERA-Trainer tigo and pull power plug. ❑ Let THERA-Trainer tigo cool down for 10 min. If error message occurs repeatedly: ❑ Contact a trained dealer.
Error 18	❑ Pull power plug and plug it back in after approx. 5 s. THERA-Trainer tigo restarts. If error message occurs repeatedly: ❑ Contact a trained dealer.
Error 19	❑ Pull power plug and plug it back in after approx. 5 s. THERA-Trainer tigo restarts. If error message occurs repeatedly: ❑ Contact a trained dealer.
Error 20	❑ Pull power plug and plug it back in after approx. 5 s. THERA-Trainer tigo restarts. If error message occurs repeatedly: ❑ Contact a trained dealer.
Error 21	❑ Contact a trained dealer.
Error 22	❑ Pull power plug and plug it back in after approx. 5 s. THERA-Trainer tigo restarts. If error message occurs repeatedly: ❑ Contact a trained dealer.
Error 23	❑ Pull power plug and plug it back in after approx. 5 s. THERA-Trainer tigo restarts. If error message occurs repeatedly: ❑ Contact a trained dealer.
Error 25	❑ Pull power plug and plug it back in after approx. 5 s. THERA-Trainer tigo restarts. If error message occurs repeatedly: ❑ Contact a trained dealer.

18.3 General errors

Error code	Troubleshooting
THERA-Trainer tigo has too little power	❑ Reduce crank radius setting. ❑ Increase motor power by one step. Damage to tendons or joints due to overstraining is possible. ❑ Before changing settings, consult therapist.
Spasm detection responds too often	❑ Reduce sensitivity of spasm detection. ❑ Reduce crank radius setting. ❑ Increase motor power by one step. ❑ Optimise sitting position and distance to unit. Damage to tendons or joints due to overstraining is possible. ❑ Before changing settings, consult therapist.
Exercising resistance is too high for active muscle exercise	❑ Increase crank radius setting. ❑ Reduce motor power. Training program Neuro: ❑ Reduce exercising resistance setting. Training program Ortho and Cardio: ❑ Reduce power demand.
Pulse monitor is not working (only for control and display unit with 5.7" or 10.4" colour screen with cardio-pulse-set)	❑ Check if transmitter (in chest belt) and receiver (in control and display unit) are correctly positioned. ❑ Correct if necessary. ❑ Check if chest belt is moistened, correctly tightened and touching the skin. ❑ Correct if necessary.
THERA-Trainer tigo is running irregularly	❑ Activate motor muscle support. (only for control and display unit with 5.7" or 10.4" colour screen) ❑ Check if crank radius setting is the same on both sides. ❑ Correct if necessary. ❑ Check if user is sitting exactly in the centre (axial position). ❑ Correct if necessary. If fault occurs repeatedly: ❑ Contact a trained dealer.
Operating THERA-Trainer tigo is not possible	❑ Make sure that START button has been pressed. It is possible that THERA-Trainer tigo is in stand-by mode. ❑ Make sure that power supply cable is intact and correctly connected. ❑ Check mains fuse. ❑ Pull power plug and plug it back in after approx. 5 s. Press START button. ❑ Make sure that correct exerciser type (arm or leg) is selected. ❑ Make sure that cranks are unlocked for upper body exercise.
THERA-Trainer tigo does not show training report	❑ Exercise for at least 1 min.

Error code	Troubleshooting
Voice-controlled emergency stop does not respond	❑ Increase microphone sensitivity setting.
Training settings are incorrect	❑ Set and save basic settings again. ❑ Reset basic settings to factory settings.
Switch button Leg/upper body exerciser without function	❑ Make sure that upper body exerciser is correctly installed, connected and activated.
Biofeedback Symmetry bar or Symmetry road indicate incorrect values (only for control and display unit with 5.7" or 10.4" colour screen)	❑ Check if crank radius setting is the same on both sides. ❑ Correct if necessary. ❑ Check if user is sitting exactly in the centre (axial position). ❑ Correct if necessary. ❑ Make sure that the user's foot movements are correct: right: pressing wrong: pulling If fault occurs repeatedly: ❑ Contact a trained dealer. Have THERA-Trainer tigo recalibrated.
Easy entry system does not stand still	If training session has been started inadvertently: ❑ Press STOP button. If fault occurs repeatedly: ❑ Contact a trained dealer.
"SPASM" appears on control and display unit.	❑ Anti-spasm-control has responded. ❑ To continue exercising see Safety devices
"MAX MOTOR POWER EXCEEDED" appears on control and display unit.	❑ Anti-spasm-control has responded. ❑ To continue exercising see Safety devices
Spasm symbol appears on control and display unit.	❑ Anti-spasm-control has responded. ❑ To continue exercising see Safety devices
"ATTENTION THERA-Trainer used too heavily reduce pedaling speed" appears on control and display unit.	❑ Reduce pedalling speed. ❑ Make sure that the user does not exceed the upper limits for number of revolutions (85 rpm) and power (80 Watt). If the user does not reduce power and number of revolutions, the error message will appear again. After three messages, THERA-Trainer tigo will stop the training session.

Error code	Troubleshooting
"TRAINING STOPPED THERA-Trainer used too heavily" appears on control and display unit.	❑ THERA-Trainer tigo stops the training session due to upper limits for number of revolutions or power being continuously exceeded.

19 TECHNICAL DATA

THERA-Trainer tigo	
Dimensions: ❑ leg exerciser ❑ Upper body exerciser	l x w x h 58-83 cm x 47.3 cm x 63-119 cm 75-90 cm x 63.8 cm x 110-125.5 cm
Weight: ❑ leg exerciser ❑ Upper body exerciser	 27-38 kg 39-45 kg
Crank length leg exerciser: ❑ 2-stepped ❑ stepless	 75 mm/110 mm 65-115 mm
Crank length upper body exerciser: ❑ short ❑ long	 75 mm 110 mm
Speed range passive training	1-60 rpm
Speed range active training	1-90 rpm
Torque range ❑ Leg exerciser ❑ Upper body exerciser	 approx. 2-22 Nm approx. 2-8 Nm
Continuous rating	80 Watts
Power input	130 VA
Power supply	230 V~, 50/60 Hz 115 V~, 50/60 Hz
Fuses:	2 x T 1.0A H 250 V e.g. Littelfuse series 215.001P (for power supply 230 V) 2 x T 1.6A H 250 V e.g. Littelfuse series 215.01.6P (for power supply 115 V)
Medical device class	IIa
Protection class:	II
Degree of protection:	Type BF
Protection category:	IP21
Sound emission	LpA < 70 dB(A)
Ambient conditions for use	5 °C to 40 °C 15 to 90% Rh 700 to 1,060 hPa
Ambient conditions for transport/delivery	-25 °C to 70 °C 15% to 93% Rh 700 to 1,060 hPa

THERA-Trainer tigo	
Suitable for users with ❑ Body height ❑ Body weight	 120 cm to 200 cm up to 120 kg
Materials used:	steel, stainless steel, plastics (POM, PA6, ABS, PE), rubber
Economic life-time: THERA-Trainer tigo	 7 years
Power consumption in stand-by mode: ❑ Control and display unit with 5.7"-/ 10.4" colour screen ❑ Control and display unit with 2.7" colour screen	 31 Watts 24 Watts
Software version:	Control and display unit with 5.7"-/10.4" colour screen: ❑ Software 3.1.x Control and display unit with 2.7" colour screen: ❑ Software 3.0 ▶ User manual valid for software versions indicated above or higher.
Dimensions control and display unit with ❑ 10.4" colour screen ❑ 5.7" colour screen ❑ 2.7" colour screen	 Diagonal: 26.4 cm Width: 21.5 cm Height: 16.5 cm Diagonal: 14.5 cm Width: 10.7 cm Height: 8.8 cm Diagonal: 6.8 cm Width: 5.4 cm Height: 4.0 cm

Note

For users with a body weight of more than 120 kg it is necessary to use special accessories for the THERA-Trainer tigo after consultation with the manufacturer or the trained dealer.

20 DISPOSAL

To dispose of the THERA-Trainer tigo:

- ▶ Observe country-specific regulations and specifications.
- ▶ Dispose of metal parts as scrap metal.
- ▶ Dispose of plastic parts as prescribed, depending on the type of material.
- ▶ Dispose of electric and electronic components as electronic scrap.

21 NOTES ON ELECTROMAGNETIC COMPATIBILITY

21.1 Lines, line lengths and accessories

The THERA-Trainer tigo is to be exclusively used with the original supply cable.

21.2 Warning notice regarding accessories

Exclusively the manufacturer's cardio-pulse-set may be used.

Use exclusively an original printer for training documentation and the required Bluetooth transmitter.

21.3 Warning notice regarding installation

The THERA-Trainer tigo is not to be used in the immediate vicinity of or stacked with other devices. If it is necessary that the THERA-Trainer tigo be used next to or in a stack with other devices, one should observe it to check if the arrangement permits it to work as intended.

21.4 Level of conformity

The immunity level requirements of DIN EN 60601-1-2 are met.

21.5 Electromagnetic emission

<table>
<tr><th colspan="3">Directives and manufacturer's declaration - Electromagnetic emissions</th></tr>
<tr><td colspan="3">THERA-Trainer tigo The is designed for operation in an electromagnetic environment as described below. The customer or the user of the THERA-Trainer tigo should make sure that the unit is used in such an environment.</td></tr>
<tr><th>Emission measurement</th><th>Compliance</th><th>Directive for electromagnetic environment</th></tr>
<tr><td>HF emissions according to CISPR 11</td><td>Group 1</td><td>THERA-Trainer tigo The uses HF energy exclusively for internal functions. This incurs very low HF emissions so it is unlikely to interfere with any nearby electronic devices.</td></tr>
<tr><td>HF emissions according to CISPR 11</td><td>Class B</td><td rowspan="3">THERA-Trainer tigo The is designed for use in all kinds of facilities, including:
❑ Residential buildings
❑ Facilities that are directly connected to a public mains supply which also supplies residential buildings.</td></tr>
<tr><td>Harmonics according to IEC 61000-3-2</td><td>Class A</td></tr>
<tr><td>Voltage fluctuation/flicker according to IEC 61000-3-3</td><td>met</td></tr>
</table>

21.6 Immunity

Directives and manufacturer's declaration - Immunity to electromagnetic disturbance			
THERA-Trainer tigo is designed for operation in an electromagnetic environment as described below. The customer or the user of the THERA-Trainer tigo should make sure that the unit is used in such an environment.			
Immunity test	**EC 60601 test level**	**Level of conformity**	**Directive for electromagnetic environment**
Static discharge (ESD) according to IEC 61000-4-2	± 6 kV contact discharge (indirect) ± 8 kV air discharge	± 6 kV contact discharge ± 8 kV air discharge	Floors should be wooden, concrete or ceramic tiled. If the floor contains synthetic materials, the relative air humidity must be at least 30%.
Fast transient electrical disturbances/ bursts according to IEC 61000-4-4	± 2 kV for supply lines ± 1 kV for input and output lines	± 2 kV for supply lines ± 1 kV for input and output lines	The quality of the supply voltage should correspond to that of a typical business or hospital environment.
Surges according to IEC 61000-4-5	± 1 kV differential mode voltage (symmetrical) ± 2 kV common mode voltage (asymmetrical)	± 1 kV differential mode voltage (symmetrical) ± 2 kV common mode voltage (asymmetrical)	The quality of the supply voltage should correspond to that of a typical business or hospital environment.
Voltage dips, short interruptions and fluctuations of the supply voltage according to IEC 61000-4-11	< 5 % U_T for 0.5 periods (> 95 % dip) 40 % U_T for 5 periods (60% dip) 70 % U_T for 25 periods (30% dip) < 5 % U_T for 5 s (> 95% dip)	< 5 % U_T for 0.5 periods (> 95 % dip) 40 % U_T for 5 periods (60% dip) 70 % U_T for 25 periods (30% dip) < 5 % U_T for 5 s (> 95% dip)	The quality of the supply voltage should correspond to that of a typical business or hospital environment. If the user of the THERA-Trainer tigo requires continuous functioning in case of power supply interruptions, we recommend using a non-interruptible power system or a battery to supply the THERA-Trainer tigo.
Magnetic field at supply frequency (50/60 Hz) according to IEC 61000-4-8	3 A/m	3 A/m	Magnetic fields at mains frequency should correspond to the typical values for business and hospital environments.

NOTE: U_T is the supply AC voltage before the test level is applied.

Directives and manufacturer's declaration - Immunity to electromagnetic disturbance			
THERA-Trainer tigo The is designed for operation in an electromagnetic environment as described below. The customer or the user of the THERA-Trainer tigo should make sure that the unit is used in such an environment.			
Immunity test	**EC 60601 test level**	**Level of conformity**	**Directive for electromagnetic environment**
Conducted HF emissions according to IEC 61000-4-6 Radiated HF emissions according to IEC 61000-4-3	3 V_{eff} 150 kHz to 80 MHz 3 V/m 80 MHz to 2.5 GHz	3 V_{eff} 3V/m	Portable and mobile radio equipment should not be used closer to the THERA-Trainer tigo (including line) as the protective distance recommended. The equation for the transmission frequency in question is used to calculate it. **Recommended protective distance:** $d = [3.5/3] * \sqrt{P} = 1.17 * \sqrt{P}$ $d = [3.5/3] * \sqrt{P} = 1.17 * \sqrt{P}$ for 80 MHz to 800 MHz $d = [7.0/3] * \sqrt{P} = 2.33 * \sqrt{P}$ for 800 MHz to 2.5 GHz with P as the transmitter's power rating in Watts (W) according to the indications of the transmitter manufacturer and d as the recommended protective distance in metres (m). An on-site test should show that the field intensity of stationary radio transmitters are below the compliance level with all frequencies. Disturbances are possible in the vicinity of equipment labelled as follows.

NOTE 1: For 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not be applicable in every case. Buildings, objects and persons influence the propagation of electromagnetic waves by absorption and reflection.

An exact technical estimate of the field intensity of stationary transmitters such as base stations of mobile phones and land mobile radio devices, amateur radio stations, AM and FM radio broadcast and television stations is not possible. In order to determine the electromagnetic environment with regard to stationary transmitters one should consider a survey of the location. If the field intensity measured at the location where the THERA-Trainer tigo will be used exceeds the conformity levels listed above, one should observe the THERA-Trainer tigo in order to check if it is working correctly and as intended. Should any performance irregularities occur, it might be necessary to take additional measures such as modifications or a change of locations THERA-Trainer tigo.

In the frequency range between 150 kHz and 80 MHz, the field intensity should be below 3 V/m.

21.7 Recommended protective distances between portable and mobile HF telecommunication devices and THERA-Trainer tigo

THERA-Trainer tigo is designed for operation in an electromagnetic environment as described below. the customer or the user of the THERA-Trainer tigo can help to prevent electromagnetic disturbances by observing the minimum distance between portable and mobile HF telecommunication devices (transmitters) and the THERA-Trainer tigo as indicated below (depending on the output power of the telecommunication device).

Power rating of transmitter [W]	**Protective distance depending on transmission frequency [m]**		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2.5 GHz
	$d = 1.17 \sqrt{P}$	$d = 1.17 \sqrt{P}$	$d = 2{,}33 \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.7	3.7	7.37
100	11.7	11.7	23.30

The distance for any transmitters the nominal power of which is not indicated in the table above can be determined by means of the equation given. P is the nominal power of the transmitter in Watts (W) as indicated by the transmitter manufacturer.

NOTE 1:

An additional factor 10/3 was used for calculating the recommended protective distance for transmitters in the frequency range between 80 MHz and 2.5 GHz. This reduces the probability of a mobile/portable communication device that was brought to the user area by mistake causing a disturbance.

NOTE 2:

These guidelines may not be applicable in every case. Buildings, objects and persons influence the propagation of electromagnetic waves by absorption and reflection.

22 WARRANTY

In accordance with legal regulations, the manufacturer grants a manufacturer's warranty for the THERA-Trainer tigo if it is handled with due care. The basis is the date of delivery.

Within this period of time, the manufacturer will replace free of charge any faulty parts of the THERA-Trainer tigo or repair free of charge the THERA-Trainer tigo in the factory or an authorised workshop.

Excluded from manufacturer's warranty:

- ❑ Wear parts
- ❑ Opened devices
- ❑ Unauthorised accessories or external devices
- ❑ Devices repaired by persons other than trained dealers.
- ❑ Any damage due to incorrect use.

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MANUFACTURER:

THERA-Trainer®

a trademark of
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For declarations of conformity, see www.thera-trainer.de